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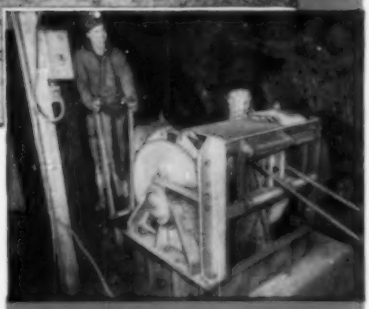

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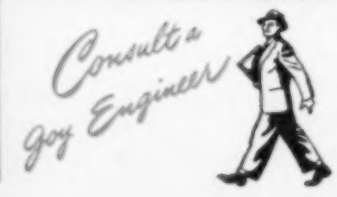

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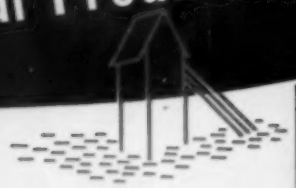

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1905 — Our Fiftieth Year in Western Canada — 1955

On the cover

GECO MINE SITE: . . . Contractors all through the winter were erecting several buildings for the Geco Mine site at Mile 24 of the new Canadian National Railways branch line from Hillsport to Manitouwadge. The work, still going on, will be the basis for a townsite of 3,000 people.

—Canadian National Railways Photo

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Railway to Manitouwadge Fabulous Copper Deposits Completed

DELIVERIES MADE: . . . A C.N.R. sleigh train of the road transport department, wends its way along a rough tote road running parallel to the right of way for the new Canadian National Railways, 24-mile line between Hillsport and Manitouwadge in the Northern Ontario wilderness. The sleigh train was operated during the winter months to deliver much needed supplies to the mine contractors at Manitouwadge in preparation for the actual operation of the mine expected to start this summer. — Canadian National Railways Photo.

ANOTHER mining treasure in Canada's vast and virgin northland was unlocked this month when construction forces of the Canadian National Railways completed the building of a 24-mile branch road from the town of Hillsport, Ontario, to the fabulous copper deposits at Manitouwadge.

Claimed to be one of the biggest strikes in Canada's mining history, copper ore discoveries there were made only 18 months ago. Since then, hundreds of prospectors have made claims in the area, and several mining companies are now drilling to determine the extent of the deposits in the territory that until the original strike attracted only the occasional Indian trapper in search of beaver pelts.

Three men, "week-end" prospectors from nearby Geraldton, made the original strike and became millionaires overnight. The three, Ray Barker, Bill Dawidowitch and Jack Forster sold their claims to a syndicate, composed of General Engineering Corporation, Consolidated Howie Gold Mines and a Toronto financier, Harry Knight. They received a cash sum, shares in the mining company that was formed, (Geco Mines Limited), and a royalty of 15 cents of every ton of ore mined from the claims they had staked and sold to the syndicate.

Prospectors Battle Tough Winter

The news of their enormous strike attracted hundreds of other prospectors to the region, who battled the toughest of winter elements to claim land which they hoped would yield them fantastic riches. Much of the prospecting was blind guess work for the region was blanketed with several feet of snow. But several mining companies did buy claims and began drilling operations to determine the ore content; a job which is still going on so that no one is certain how great the copper riches are that will be reaped from this Northern Ontario area, about 45 miles above Lake Superior.

Intense speculation and sure strikes were the stimuli needed for the construction of a branch line to the area by Canadian National Railways. Starting from the flag-stop station of Hillsport, on the C.N.R.'s main line 43 miles west of Hornepayne, the branch road runs southwest through a dense forest of jack pine, spruce, poplar and birch to the Geco Mine site at Mile 24. Lake Manitouwadge will be the townsite which is planned for a population of at least 3,000 people.

The 24-mile right-of-way was pushed rapidly over land composed of sand, rock and muskeg with the road bed being prepared as quickly as possible for track laying forces to move in during the summer. Started in the late summer of 1954, construction crews were working all winter long despite temperatures which dropped to 45 below on occasion. Powerful bulldozers ripped through a dense underbrush, rooting out stumps and other debris which hasn't been disturbed for centuries. Drag line machines shovelled up earth that lay beneath a crust of muskeg, and built long stretches of the road bed. Other work crews have installed culverts and trestle bridges over depressed areas of what is essentially flat terrain running the full distance between the two points.

Plans For 3,000 Persons

At the Geco Mine site, other contractors erected various buildings, including an office structure for the staff and warehouses for materials and equipment. Crews are also busy sinking a mine shaft to prepare the way for the actual mining of copper ore.

Campsites to house workmen of all these projects have sprung up everywhere; a strange new sight to old Cree and Ojibway Indian trappers who, while making their trap runs, occasionally threw up a tent to protect themselves overnight.

While C.N.R. construction forces and engineers busily engage in the actual line project, a small group of men from the C.N.R.'s road transport department carried on still another essential job to meet deadlines for the construction gangs at Geco Mines.

They operated sleigh trains between the rail head at Hillsport, where goods are sent for delivery to the Geco Mine site, over a crudely constructed tote road running parallel to the right-of-way.

This sleigh train project became necessary when the tote road was considered too rough for any other type of vehicle and the Geco contractors urgently required goods to continue their work.

The loaded sleighs, with freight shipments including timber, cement, drums of oil and gas, electrical supplies, piping

(Continued on Page 9)

PRELIMINARY REPORT ON THE GEOLOGY OF MANITOUWADGE LAKE AREA

By E. G. PYE,
Geologist, Department of Mines, Ottawa

A paper delivered by Mr. Pye at the annual meeting of the Prospectors and Developers Association, held at Toronto, March 7-9, 1955.

UNTIL RECENTLY, little interest had been shown in the region about Manitouwadge Lake. This may be due to the commonly held opinion that greenstone belts of small area do not lend themselves to the occurrence of large mineral deposits. It may also be due to the highly metamorphosed condition of the rocks, because many prospectors consider that schists and gneisses were unfavorable for ore deposition. In any event, the region was avoided until as late as 1947, when diamond drilling was conducted to test a gold deposit on claims held by Teck Exploration Co. near Hemlo. At about this time, E. C. Tripp and Zebe Renshaw became interested in large bodies of titaniferous magnetite near Bamoos Lake; and Moses Fisher is reported to have staked a sulphide deposit near Manitouwadge Lake. This sulphide deposit, later developed into the now famous Geco mine. At the time, however, little interest could be raised in the discovery, and, after two years, the claims staked by Moses Fisher were allowed to lapse.

In 1952, prospectors working for MacLeod-Cockshutt Gold Mines staked the old Beggs-Curie nickel showing east of the Pic River. A minor staking rush followed. The nickel showing was drilled early in the following year. The results of this work proved inconclusive, but by this time interest in the region was considerable. Two prospectors, Roy Barker and Bill Dawidowich, while examining a geological map, prepared in 1932, by Dr. J. E. Thomson of the Ontario Department of Mines (1), noted that sulphides and gossan had been found north of Manitouwadge Lake. They decided to investigate, and with air transportation provided by Jack Forster, one of their neighbors in Geraldton, they visited the location shown on Thomson's map in May. This resulted in the rediscovery of the deposit staked several years previously by Moses Fisher; and the two men were sufficiently impressed that they decided to re-stake the ground. However, before this could be done properly, it was necessary for them to go back to Geraldton for camping supplies.

While Barker and Dawidowich were in Geraldton, others were becoming interested in the Manitouwadge Lake area; and when they returned on June 22, they were a little more than surprised to find that, during their absence, the sulphide deposit had been acquired by two other prospectors. Fortunately for Barker and Dawidowich, these prospectors were looking for nickel. When assays of samples taken from the showing indicated the absence of this metal, the claims were not recorded. As soon as the 30-day time limit for recording was up, Barker and Dawidowich proceeded to re-stake the discovery.

In July, 1953, the sulphide deposit was examined by W. S. Hargraft. Upon his recommendation the property was taken up by General Engineering Company, Consolidated Howey Gold Mines, and H. W. Knight and associated on a partnership basis. Diamond drilling in August and September indicated the possibilty of a copper-zinc ore body. Geco Mines, Limited, was incorporated in October, and it was not long before the results of further drilling indicated a deposit of such importance that the biggest staking rush in the history of Ontario, and one of the biggest in the history of Canada, was precipitated. The significance of the discovery is made apparent by a review of the company's official estimate of ore reserves published in the Northern Miner. According to the Northern Miner the deposit contains, to a depth of 1300 feet, 14,899,000 tons of ore having an average grade of 1.72 per cent copper, 3.55 per cent zinc, and 1.73 ounces of silver per ton. At present prices the metallic content of this ore, has a value, before deducting mining, milling, and smelting charges, in excess of $293,000,000.

Impact of the Geco discovery on the Canadian mining scene has been impressive. But what about this discovery. What do we know, geologically speaking, about the deposit in particular and the Manitouwadge Lake area in general? What knowledge have we gained that might assist us in the location of new ore bodies? And just what are the future possibilities of the area? I will attempt to shed some light on these questions.

General Geology

In regard to the general geology, all the consolidated rocks exposed in the Manitouwadge Lake area are of Precambrian age. They have been divided into three main groups.

(1) A system of highly altered volcanics and sediments, which, together with iron formation, are believed to be of Archaean or Early Precambrian age;

(2) An assemblage of intrusive igneous rocks, of post-Archaean and possibly of Algoman age; and

(3) Diabase dikes, which may be correlated with basic intrusives, of late Precambrian age, exposed around Lake Nipigon.

The areal distributions of the three groups of rock formations are shown on slide No. 1, which is a generalized geological map of the area. The Archaean rocks are shown in green, blue and black; the Post-Archaean rocks, in red; the diabase dikes, in yellow.

Archaean

The Archaean rocks have been subdivided into a volcanic series, a sedimentary series, and iron formation. The volcanic series is shown on the slide in green. It is represented in the field by hornblende schists, hornblende-feldspar gneisses, and amphibolites, which form a belt that extends from near the centre of the east boundary of the area, southwestward to Manitouwadge Lake, and thence westerly across the entire south quarter of the area.

The volcanic rocks are enclosed on the north and south by sedimentary rocks. These sedimentary rocks are shown on the slide in blue. There are three principal varieties:

(1) A biotite gneiss, containing 10 per cent or more of biotite, that is considered to be the metamorphosed equivalent of an argillaceous sandstone or greywacke;

(2) A streaked quartz-feldspar gneiss or feldspathic quartzite, considered to be the equivalent of a feldspathic sandstone or arkose; and

(3) A dark, coarse-grained, garnetiferous hornblende-biotite gneiss, considered to be the equivalent of a calcareous, chlorite grit or a basic tuffaceous sediment.

Intimately associated with the sedimentary gneisses is an iron formation, so termed in virtue of its layered structure and magnetic properties. It is a

(1) Jas. E. Thomson, "Geology of the Heron Bay-White Lake Area," Ont. Dept. Mines, Vol. XLI, 1932, pt. 6, pp. 34-47.

banded rock, which for the most part consists of thin layers of quartz alternating with equally thin layers of one of chlorite schist, hornblende schist, hornblende-biotite schist, and, on the Lun-Echo property, a very coarse pyroxene-bearing amphibolite. It has been variously termed quartz-chlorite rocks, quartz-amphibole rock, quartz-amphibole-pyroxene rock, and iron formation in the field. Since the rock is distinctly banded in both outcrops and drill cores; since the schist layers contain disseminated crystals and thin seams of fine granular magnetite; since individual horizons can be traced by dip needle and magnetometer; and since these horizons are very persistent along the strike, it is thought that "iron formation" is the most appropriate term.

Post-Archaean

After their formation, the Archaean rocks were folded and intruded by large masses of granite and by numerous dikes, sills and small irregular bodies of pegmatite. The granitic rocks in the area, including granitized sediments and volcanics, occur in three principal places: (1) in the extreme southeast corner of the area; (2) in the extreme northwest corner; and (3) in the whole of the northeast quarter. The granitic rocks to the northwest and southeast are believed to represent a single large mass, in which the Archaean rocks occur as deeply infolded inclusions; those in the northeast quarter of the map area are believed to represent a satellite of the main mass, that has been localized along the axis of a major synclinal fold.

Keweenawan

The youngest rock exposed in the Manitouwadge Lake area is diabase. The diabase forms a number of narrow, but persistent north-south dikes, some of which appear to be localized along transverse faults of small magnitude. In that these dikes cut sharply across all the other consolidated rocks, including the granites, they may be of Late Precambrian age. It is possible that they could be correlated with similar rocks, presumably of Keweenawan age, that outcrop to the west in the vicinity of Lake Nipigon.

Structural Geology

Of all the rocks mentioned, the iron formation is the only one which occurs in sufficiently unique and persistent horizons that it can be used with confidence to unravel the structural geology. In the vicinity of Wowun Lake on the east, the iron formation, strikes south westerly and dips steeply north. Proceeding westward toward Fox Creek and the Geco mine, however, the formations assume an east-west strike; and still farther west, at a point midway between Fox Creek and Nama Creek, they strike north west and dip 40° to 50° N.E. Finally, at the west side of the map area, the formations assume first a northerly strike and then they double back on themselves to strike north-easterly again. They delineate a large trough or synclinal fold. Dip measurements at the nose of this fold indicate a plunge to the north east of 20 to 30 degrees. In the east part of the area, lineation and drag folds indicate a steeper plunge, of about 40 degrees.

After the major folding and during or after the formation of the granitic rocks, the Manitouwadge Lake area suffered a series of disturbances that resulted in the development of a large number of faults. These faults are of three types. (1) longitudinal or strike faults, which more or less parallel the formations along the south limb of the syncline; (2) transverse faults which strike north-south across the area; and (3) diagonal faults, which strike obliquely to the others. All are represented in the field by deep linear depressions in the topography.

An example of a major strike fault is the Agam Lake Fault, which strikes due west, from Manitouwadge Lake to near the west boundary of the map area, just north of and roughly parallel to the belt of horneblende schists and gneisses. The magnitude and direction of movement along this break have not been determined. However, this fault appears to truncate a number of north-south transverse faults, and at the same time appears to terminate against the north-south Nama Creek and Fox Creek faults.

At least three periods of movement are thus indicated. A fourth period of movement may be responsible for the fault, that extends diagonally across the area from northwest to southeast. Here, repeated movements apparently occurred. On the property of Lake Kaginu Mines in the southeast corner of the area, a diabase dike was localized along the fault. But the diabase has been fractured and brecciated, and the conclusion may be reached that both pre-diabase and post diabase movements occurred. Despite this, it is of interest to note that the net result of all displacements has been no more than one or two hundred feet, north on the east side. The Geco ore zone, for example, has been traced across the fault to the Hucamp property without any great apparent offset. In point of fact it may be noted that no considerable horizontal displacement has occurred along any of the faults in the area.

Economic Geology

All the mineral deposits discovered within the boundaries of the map area are sulphide replacement bodies. These strike and dip parallel to the formations that contain them; and have been found in or closely associated with either iron formation or some variety of sedimentary gneiss.

Replacement Sulphide Deposits in Iron Formation

Sulphide replacement deposits have been found on all mining properties where iron formation occurs in the sedimentary series. The iron formation is shown in black. As mentioned previously, it is a banded rock in which layers of quartz alternate with layers of any one of chlorite schist, horneblende schist, and horneblende-biotite schist. In the deposits found in this rock, the metallic sulphides are found to heal fractures in the quartz and to occur as either masses or disseminated crystals and grains replacing the minerals of the schist layers.

The principal sulphide is pyrrhotite. As a rule, it is accompanied by pyrite; and in many cases the two iron sulphides are the only metallic minerals present. However, in a few places chalcopyrite, sphalerite and even galena may be associated with the iron sulphides. Where these become abundant across mining widths, material of ore grade may be indicated.

The replacement deposits in iron formation may thus contain values in copper, lead, and zinc. Silver may also be present, and adds to the overall grade. However, the known deposits tend to be of limited extent. On the Lun-Echo property, for example, three have been thoroughly tested by diamond drilling. In each, commercial grade material, across widths up to and exceeding 25 feet, was indicated, but none of the deposits was found to have a length greater than 500 feet. The largest deposit is the Willroy No. 2 zone. This zone ranges from 20 to 30 feet in thickness, and, at the time of my visit to the property in September, 1954, had been traced by drilling for a length of 800 feet. Interesting features, which serve to distinguish it from others found in iron formation are relatively high contents of galena and silver, and a low content of chalcopyrite.

Replacement Sulphide Deposits in Sedimentary Gneisses

Replacement sulphide deposits have been found not only in iron formation but also in biotite gneiss, on the Nama Creek property; and quartz-feldspar gneiss, on the Geco and Willroy properties.

Replacements Deposits in Biotite Gneiss

On the Nama Creek claims, electromagnetic surveys have indicated a strong conductor extending northwesterly across the property. This conductor has

been traced for a length of 1,100 feet. It was thoroughly tested by diamond drilling last year and was found to be a strongly mineralized zone, up to 20 feet in width, dipping at about 45° N.E. This zone consists largely of dark colored biotite gneiss, that has been injected by pegmatite and quartz stringers and mineralized with pyrrhotite, pyrite, chalcopyrite, sphalerite, and galena. In places this material was found to have grades comparable to some of the Geco ore, but across relatively narrow widths.

Replacement Deposits in Quartz-Feldspar Gneiss

The most significant type of mineralization that has been located in the area is that which makes up the Willroy No. 1 zone and the Geco ore body. Of the two, the Willroy No. 1 zone is the shorter, more narrow, and lower grade. It strikes east-west, dips vertically or steeply north, and ranges up to about 50 feet in width. It lies in quartz sericite schist, along the contact with biotite gneiss to the north, and consists of metallic sulphides disseminated throughout, and plated along shear planes in the host rock. The principal sulphides are chalcopyrite and pyrite, with pyrrhotite and subordinate sphalerite. Drill hole intersections range up to 1.80 per cent copper, 0.66 per cent zinc, and 0.54 ounces of silver per ton over a core length of 63 feet (Hole No. 19).

The Geco ore body outcrops about 600 feet south and a short distance east of the Willroy No. 1 zone, and from here extends eastward for a horizontal length of 2,700 feet. Like the Willroy No. 1 zone, it occurs in quartz sericite schist, this time at the contact with granite and garnetiferous horn-blende-biotite gneiss to the north. It strikes east-west, dips vertically to steeply south, and rakes to the east at about 40 degrees. It consists of a narrow, tabular core of more or less massive sulphides, principally pyrrhotite and sphalerite, enclosed by a wide envelope of copper, zinc and iron sulphides disseminated throughout the host rock. This tabular core occurs close to and parallels the south wall of the ore body. It attains a maximum thickness of about 60 feet east of Fox Creek, from which point it tends to decrease in width and to lens out, in both directions and with depth. The envelope of high grade copper-low grade zinc ore, on the other hand, tends to increase in thickness as the core diminishes in size. Hence, because of the easterly rake of the deposit as a whole, high grade zinc ore, with lower copper values, across narrow widths, occurs in the upper and eastern portions; high grade copper ore, with low zinc values, across greater widths, occurs in the lower and western portions.

The ore body is divided naturally into three sections. The "west" or "A" section lies west of the Fox Creek fault; the "middle" or "B" section lies between this fault and a zone of north-south diabase dikes; and the "east" or "C" section lies east of this zone of diabase dikes. The west section is approximately 1,200 feet in length, ranges up to 220 feet in thickness, and is essentially a high grade copper-low grade zinc ore. The middle section lies about 250 feet north of the west section. It is approximately 850 feet in length, has an average width of 58 feet at the surface, and is a high grade zinc-low grade copper ore. The east section is about 600 feet in length at the surface, and represents the extension of the middle section down the general rake of the ore body.

A significant control over the localization of the Geco ore body may be the proximity of the large body of granite to the north. The ore body occurs in a horizon of quartz sericite schist, which is bordered to the north by granite and garnetiferous hornblende-biotite gneiss. Where the schist is bordered by the granite, the best widths and values in copper have been found; where it is bordered by gneiss, both to the west and to the east, the widths and metallic content decrease, and even the quartz sericite schist tends to finger out and disappear.

Conclusions

In the past year several deposits containing significant amounts of one or more of copper, lead, zinc and silver have been located. Most of these appear to be of limited size, as a result of which the opinion has been expressed that the Manitouwadge Lake area is a one-mine camp. This may turn out to be true. However, if one considers the number of deposits discovered in relations to the limited geological knowledge of the area, and if one considers the fact of widespread mineralization indicated by these deposits, he must be optimistic. Present indications are that the future possibilities of the area are very good.

Up to now, I have outlined briefly many of the basic geological facts of the Manitouwadge Lake Area. However, these facts have been presented in the form of general information, and no hints have been given to help in the search for ore deposits. It is now my intention to terminate this paper by assembling the facts into such a form that they may be of use to the prospector and developer. In the light of the results of discoveries made to date, the search for ore might be based on the following points:

(1) All the known deposits containing significant amounts of one or more of copper, lead, zinc and silver occur within the sedimentary series in or close to a strong zone of iron formation bands. This zone lies near and roughly parallels the boundary of the large granite stock localized along the major synclinal axis.

(2) All the significant deposits discovered occur in iron formation, biotite gneiss, or quartz feldspar gneiss. None has been found in the hornblende schists and gneisses or in the masses of granitic rocks.

(3) The larger and richer deposits occur where the formations strike east-west, as on the Geco and Willroy properties.

(4) The largest and richest deposit, the Geco ore body, is localized at the contact between massive viotite granite and less competent quartz feldspar gneiss.

(5) The Geco deposit exhibits a zonal distribution of sulphides; pyrrhotite and sphalerite appear to be concentrated in the upper and eastern portions of the ore body; chalcopyrite and pyrite in the lower and western portions. Such a zonal distribution may be a factor in the search for copper ore after zinc mineralization has been located.

In the past year several deposits containing copper, lead, zinc and silver have been located. Most of these appear to be limited, either in length or width or both; and as a result the opinion has been expressed that the Manitouwadge Lake area is a one-mine camp. This may turn out to be true. But, if one considers the number of deposits discovered in relation to our limited geological knowledge of the area, and if one considers the fact of widespread mineralization indicated, he must be optimistic. Present indications are that the future possibilities of the area are very good indeed.

Manitouwadge Railway

(Continued from Page 6)

and machinery, moved from Hillsport daily and made the 24-mile trip to the mine site slowly over the rough tote road running beside the new roadbed. Each train was equipped with a caboose, having bunks for the two operators, a stove and a radio telephone installation to keep in touch with the base camp at Hillsport.

The sleighs, hauled by caterpillar tractors began operation in January and continued to deliver from the regular freight trains at Hillsport to Geco Mines Limited until Spring breakup.

The Mining Association of British Columbia has donated $22,765 to the St. John Amublance Association during the past five years.

Manitoba Oil Production Again Hits Stride as Road Conditions Improve

By Leslie Orr Rowland, Editor, Oil in Canada

MANITOBA'S oil production began to hit its old stride again in May, as road conditions improved in the latter part of the month and the tie-in of more tank batteries to the Trans-Prairie pipe line system in the Virden area relieved crude oil producers of dependence on truck transportation. The official report of the Mines Branch, Department of Mines and Natural Resources, showed that Manitoba wells produced 245,899 barrels in May, an average of 7,932 barrels per day, moderately above the 7,317 barrels per day produced in April for an aggregate of 219,508 barrels in the shorter month.

The St. Boniface refinery of North Star Oil Limited went on stream with the first charge of crude oil to the distillation unit a week ahead of schedule on June 24. This photograph shows the boiler house and the outside boilers getting into operation, with the cooling water tower in the background and some of the tanks beyond at upper right.

Deputy Minister J. G. Cowan forecast that June production will exceed 10,000 barrels per day, when the official figures are published early in August. This not too optimistic prediction was borne out by figures supplied unofficially by Trans-Prairie Pipelines Ltd., which has been carrying as much as 13,000 barrels per day through its gathering system for delivery to the Interprovincial pipe line pumping station at Cromer, six miles south of the Daly field. While the daily figure should not be taken as a representative average, since it represents to some extent the rotating of production in the various batteries and probably was reached at times when a large proportion of the batteries were being pumped out simultaneously, the number of well completions in recent weeks indicates that a production rate of more than 10,000 barrels per day will be sustained for the rest of the year and maximum production should approach 15,000 or 16,000 barrels per day by the end of 1955.

The Trans-Prairie system has been extended substantially, with winter pipe stringing facilitating summer construction of extensions, and it consisted of 25 miles of main line plus 20 miles of laterals by the end of May. Several batteries have been tied in since then, and the company is being kept busy laying pipe fast enough to keep up with the rate of new oil wells. This will be an important factor in the remainder of the summer's production, as roads are not dependable in the region and a weatherproof outlet would ensure a steady rate of optimum oil production.

Five-Month 1954 Production Doubled

The May production contributed to more than doubling 1954 cumulative production in the first five months of 1955, when 1,299,188 barrels were produced, against 621,074 barrels in the first five months of last year. May itself saw production of nearly double the 126,941 barrels produced in May, 1954. During the month, all-time cumulative production from all fields in the province passed the four-million mark to chalk up an aggregate of 4,221,989 barrels. Gross value of this production has been more than $10,000,000, making a substantial dent in the capital expenditures which have been made in the past seven years in an effort to locate the oil fields.

May marked a historic point in field development, when for the first time the veteran four-year-old Daly field was surpassed by Virden-Roselea in total production. The comparative figures were 106,188 barrels for Virden-Roselea, or 3,426 barrels per day, and 102,802 barrels for Daly, or 3,316 barrels per day. The proportions of total production which the two major fields occupied were 44 and 42 per cent respectively, or a total of 86 per cent of all Manitoba production for the month. North Virden, lagging far behind with 34,864 barrels or 1,125 barrels per day, accounted for 13 per cent, leaving only one per cent divided among all the other fields and pools, several of which did not produce at all because of bad weather and road bans which prevented tank trucks from getting into and out of them.

While Daly field production increased 12 per cent over April in daily average, Virden-Roselea production soared by 22 per cent. As a large number of wells in this field were completed in the latter part of May and through June, the greater producibility should be reflected in a greater spread during the next few months, with Virden-Roselea probably reaching more than half the Manitoba total as the summer goes on.

Cumulative Totals Impressive

Cumulative production figures continued at an impressive rate, in keeping with the current output curve. Daly had produced a total of 2,501,124 barrels at the end of May, or almost 60 per cent of the all-time Manitoba cumulative production. Virden-Roselea's cumulative total was 1,129,066 barrels, or nearly 27 per cent. North Virden had accounted for 316,523 barrels or 7½ per cent.

By this summer it was becoming apparent that these three major fields constitute all the significant oil accumulations so far discovered in Manitoba. The minor fields, while fairly substantial in number, all cover small areas and in most cases comprise marginal producing wells. Exploratory drilling so far in 1955 has not produced any such important additions to the proven reserves of Manitoba as have a number of strategic extensions to the

three existing major fields. There appears at present to be a premium on drilling development wells in the areas whose limits are by no means fully defined, rather than risking a great deal of capital on straight wildcat operations.

This attitude of the operators probably accounts for the relative scarcity of wildcat wells in 1955, which in the first six months numbered one third fewer than in the same period of 1954, while development wells have increased by two-thirds. The comparative numbers were 19 wildcats against 28 last year and 126 development wells against 76. Although the number of wells which finished drilling in June was not quite equal to the peak months of October and December last year, it was nearly double the number finished in June last year, at 36 against 19. If this trend continues through the summer and fall, a target of 350 to 400 wells completed this year would be easily attainable.

The number of producing wells has climbed steadily, with the May report showing the month's production derived from 302 wells actually producing out of 359 capable of production at the end of April and 378 capable at the end of May, as 19 wells were placed on production during May. The number of wells capable of producing has now passed the 400 mark, with the addition of 26 new oil wells during June.

Imperial Loses Third Place

Company standings in production volume reverted to the status of April, as Imperial lost its third place back to Canadian Superior. The California Standard Company was first as usual, with 122,926 barrels, still holding close to half the Manitoba total with just under 4,000 barrels per day average. In second place was the team of The British American Oil Company Limited and Union Oil Company of California, which produced 30,427 barrels or not quite 1,000 barrels per day. Canadian Superior Oil of California Ltd. produced 25,623 barrels to take third place, while Imperial Oil Limited with 21,542 barrels was fourth. A relative newcomer to the Manitoba scene with its acquisition of the rights to oil and gas under the Virden townsite, Ponder Oils Ltd. moved up over 10,000 barrels to occupy fifth place. Its total production was 10,259 barrels. The other operators all produced much smaller amounts of oil.

Cal-Standard operated 151 wells in May, while the B.A.-Union team operated 23 and Canadian Superior had 31 producing. Imperial operated 19 wells.

Several new wildcat wells came to grief in the period from the middle of June to the middle of July, as programs delayed by the weather earlier in the season made good progress. At the same time, one of the wildcat completions in the Oak Lake district which had been an indicated commercial producer was suspended as doubtful, but the second went on production as an apparent commercial oil well. Another indicated discovery was abandoned for excessive water production, but a wildcat in the same area set production casing with indications that it might be made an oil well.

Crude oil from the Virden area fields has been flowing through the Trans Prairie gathering pipe line recently at rates exceeding 16,000 barrels per day. This marks an increase of more than 100 per cent since this scene of last December when J. G. Cowan, deputy minister of mines and natural resources for Manitoba, turned the valve to open the line officially as shown in this photograph.

The Oak Lake area completion was McCarty & Coleman Routledge 3-33, lsd 3-33-9-25WPM, ground elevation 1,424 feet, which was placed on production from its total depth of 2,080 feet after receiving a workover with a service rig for several days. The indicated producer which has been suspended is the same team's Maon 12-15 wildcat, lsd 12-15-9-25WPM, three miles southeast of the Routledge success, which completed drilling at 2,100 feet (ground elevation 1,418 feet), set production casing and attempted to complete commercially. No decision has been announced as to reworking this promising well.

Wildcats Abandoned

In the same region, the team's De Galley 12-35 wildcat, lsd 12-35-9-25WPM, ground elevation 1,400 feet, was abandoned at total depth of 2,422 feet after encountering some promise of Mississippian oil but not in possible commercial quantities.

McCarty & Coleman announced at mid-July the abandonment of their next wildcat test in this interesting area, which is apparently along a trend running southeast from the Virden [illegible] field. Also on a farmout from Canadian Superior, this new test was McCarty & Coleman Oak Lake 13-6, lsd 13-6-9-24WPM, 3½ miles southeast of the Maon 12-15 strike. Further plans for the Oak Lake area have not been disclosed, but some follow-up drilling will certainly be scheduled in a pattern from the Routledge success, and other companies with land holdings in the area will probably be attracted into development drilling.

The indicated discovery which was "drowned out" was the Cal-Standard South Harmsworth 6-25 wildcat, lsd 6-25-11-26WPM, ground elevation 1,475 feet, which finished drilling at total depth of 2,255 feet and gave encouragement in the Mississippian limestone. This wellsite is 2½ miles northeast of the nearest producing wells in the North Virden field and a little more than a mile southeast of the Dome Harris Cox South Harmsworth 13-26 "teaser" which was also dry and abandoned after failing to make a water shut-off after it had been treated with Sandfrac.

The other indicated successful discovery in the region is Dome Naco Harmsworth 1-28, lsd 1-28-11-26WPM, actually an extension rather than a wildcat as it is only one mile north of producing wells at the northwest end of the Scallion sector of North Virden. This well, ground elevation not reported, Kelly Bushing 1,513 feet, completed drilling at total depth of 2,035 feet, set production casing and at mid-July was waiting on service rig to complete as an oilwell, with almost certain prospect of success. This well is important because it has apparently extended the North Virden field a mile north and thus opened up two or three sections as probably productive.

Regent Area Hot

To balance its extension success, the Dome-Naco team (which includes Dome Exploration (Western) Limited, subsidiary of Dome Mines Limited, and Western Naco Petroleums Ltd.) drilled a dry hole south of Whitewater, three miles southeast of the field. This well, Dome-Naco South Whitewater 2-2, lsd 2-2-3-21WPM, ground elevation 1,778 feet, was abandoned at total depth of 3,010 feet. The team was drilling at the middle of the month on its next wildcat venture, Dome-Naco South Regent 1-34, lsd 1-34-4-22WPM, ground elevation 1,643 feet, five miles northwest of the Cal-Standard South Regent 6-7 discovery well which has just been offset by a successful follow-up well of Cal-Standard, South Regent 11-7, lsd 11-7-4-21WPM, completed at 2,520 feet (ground elevation 1,637.1 feet). The Regent area, northwest of the Whitewater oil field, is rather hot right now and further activity can be expected following the good experience of California Standard in its development operations.

The team of Anglo-Canadian Oil Company Limited, Kroy Oils Limited and Bralsaman Petroleums Limited, operating on a farmout of 5,280 acres from Souris Valley Oil Co. Ltd., has drilled another two dry holes. Anglo et al Souris Valley Wicks 1-8, lsd 1-8-3-29WPM, ground elevation 1,576 feet, reached 3,680 feet (2,092 feet subsea), two miles west of the Pierson oil field limits. The same team's Crown Coulter 16-18 wildcat, lsd 16-18-1-26WPM, ground elevation 1,417.55 feet, was drilled to total depth of 3,452 feet (2,024 feet subsea). Its site is four miles east of the Great Northern Souris Valley Coulter 16-16 dry hole basement test drilled last summer in the Coulter region which is now filling up rather quickly with dry holes.

The Imperial Oil Limited Melita area wildcat, Imperial West Brenda 13-17-4-26, lsd 13-17-4-26WPM, was abandoned at total depth of 3,491 feet (2,023 feet subsea). Ground elevation was 1,456 feet. This well was 2½ miles south of the Cleary McCallum 4-32 dry hole.

In the Pierson area, Thomas W. Leach of Bismark, North Dakota, completed as a dry hole his Thomas W. Leach Roblin 2-27 wildcat, lsd 2-27-3-28WPM, ground elevation 1,521 feet, at total depth of 3,189 feet. The site was 2½ miles east of the Texaco-McColl Graham Creek A-4-29 abandonment.

Operating on a dual farmout from Cal-Standard and Canadian Superior, of separate parcels of land around the general Woodnorth area, Cleary Oil Co. Ltd. completed the first of four proposed wells, as a dry hole. The wildcat, Cleary Watt 3-16, lsd 3-16-8-27WPM, a mile and three-quarters south of the Woodnorth oil field, was completed at total depth of 2,750 feet (ground elevation 1,543.66 feet). The Cleary drilling rig, company-owned, was moved to the site of a southeast fringe well at Woodnorth, Cleary Wilson 15-21, lsd 15-21-8-27WPM, ground elevation 1,537.70 feet, east offset to the Cal-Standard Woodnorth 14-21 oil well. This well was spudded in on July 12.

On another Souris Valley farmout, Rio Prado Consolidated Oils Ltd. completed as a dry hole its Rio Prado Souris Valley Gibson 2-14, lsd 2-14-3-28WPM, ground elevation 1,517.4 feet, at total depth of 3,428 feet. The location is 4½ miles northeast of the easterly extension to the Pierson oil field. The easterly limits of possible productive area at Pierson appear to have been delimited rather conclusively by this and the other area wells.

On the brighter side of Manitoba oil development, the new refinery of North Star Oil Limited in St. Boniface, rated at 12,000 barrels per day capacity, but probably capable of producing considerably more than this volume of manufactured products, went on stream with initial charge to the crude oil process units on June 24, a week ahead of schedule. The new plant is designed primarily as a gasoline refinery and will produce a much larger proportion of high octane motor gasoline from each barrel of crude charge stock than its old predecessor of 4,000 barrels per day capacity. The old refinery, according to a statement by president F. C. Manning, will be dismantled and moved to the Peace River area of northwestern Alberta to be set up for serving the region with petroleum products now supplied largely from Edmonton. No date was set for this large project.

Inco Saves Two Months Excavating Station by Blasthole Method

FOR THE FIRST TIME in its operations, the International Nickel Company of Canada has used the blasthole mining method to excavate a giant underground crusher station at Levack Mine in the Sudbury District of Ontario. The huge chamber, big enough to hold two average-sized 8-room houses, is on the 2,650-foot level.

The crusher station, concreted throughout, required an opening 70 feet high, 26 feet wide and 68 feet at its longest point.

A raise 7 feet by 11 feet was first driven from the loading pocket at 2,825 level up to the base of rail on 2,650 level, then a drift 7 feet by 7 feet was opened from No. 2 Shaft station to connect with the raise. The full dimensions of the crusher station at the base of rail were silled out by square setting. After a second cut, the back was roof-bolted and heavy steel ceiling beams were installed. With the square sets as a working platform, concrete was poured for the roof and walls, after which the sets were removed.

Then, with longhole tungsten carbide, the part of the crusher station below the 2,650 base of rail was all drilled off. About 175 holes were required, varying in depth from 10 to 49 feet. Drilling totalled more than 5,600 feet.

As slashing into the raise progressed, the excess broken rock was pulled directly into the skips at the 2,825 level loading pocket. When blasting was completed, the entire opening for the station below base of rail was filled with broken rock. As the level of the muck was pulled down, using a slusher when required, steel beams were installed for the first and second floors of the station. Finally, the balance of the broken rock was drawn off from the opening and the walls were concreted.

By adopting this method of excavation in preference to previously accepted mining practices Inco was able to save more than two months in construction time.

MADSEN NET EARNINGS MAY SET NEW RECORD

Production for the first quarter of this year was in excess of $900,000, and for April was estimated at $273,000, E. G. Crayston, general manager, informed the annual meeting of shareholders of Madsen Red Lake Mines Ltd. He says that earnings for the current year might set a new record despite loss of cost aid.

PRODUCTION OF COPPER AND NICKEL INCREASES IN FIRST QUARTER

Production of both copper and nickel increased in the first quarter of this year compared with a year ago. Copper production rose to 78,092 tons from 63,034 and nickel to 42,050 tons from 37,967. March production of copper was up slightly to 26,701 tons from 26,679 and nickel output rose to 14,902 tons from 13,502.

Saskatchewan Sodium Sulphate Deposits Exceed 200,000,000 Tons

By Saskatchewan Bureau of Publications

SASKATCHEWAN has the world's largest and purest deposits of sodium sulphate in its many lakes and sloughs, according to Hon. A. G. Kuziak, minister in charge of crown corporations, Mr. Kuziak said geologists estimate that Saskatchewan has resources of over 200,000,000 tons of this valuable industrial mineral—the only pure deposits on the North American Continent.

Sodium sulphate, or salt cake, is used in the manufacture of Kraft paper and in the detergent or soap industry, with some being used in the manufacture of glass.

Mr. Kuziak said that Saskatchewan Minerals, a provincial crown corporation, made its first shipment of sodium sulphate from its million-dollar plant near Chaplin in 1948. He added that the actual first production of salt cake in Saskatchewan was started back in 1919, but the existing plants were limited in size and production, and were unable to meet the demand from the Kraft pulp mills that were expanding rapidly on the North American continent—Kraft Paper Industry of America being the largest user of salt cake.

The crown corporation's plant at Chaplin was established following an investigation which showed sodium sulphate could be produced by either a mining process or a brine process, and a marketing study revealed that despite an expanding market there were no signs of further expansion by industry.

Largest, Most Modern

The plant at Chaplin is the world's largest and most modern, and has placed Saskatchewan in the forefront of the world production of sodium sulphate. Since the plant started operations, salt valued at more than $5,000,000 has been produced. Chaplin Lake covers an area of over 18 square miles of alkaline waters, estimated by engineers to contain more than 15,000,000 tons of hydrous salt.

Mr. Kuziak said studies in 1953 and 1954 of the supply and demand of the salt cake industry showed a continuous upward trend of about four per cent annually or 40,000 additional tons per year, closely paralleling the continuous expansion of the Kraft paper industry.

Because of a sharp increase in the demand for salt cake early in 1954, the crown corporation looked into the possibility of expanding the industry, with the probability of erecting a new plant at Snakehole Lake or some other point. At that time, the owners of Natural Sodium Products Limited approached the government with an offer to sell their plants at Bishopric and Alsask.

Mr. Kuziak said an outside firm of consulting engineers was engaged to make a complete study of the Bishropric plant, as to its value, raw material, wet and dry year outlooks, reservoir capacity, cost of operating, and cost of repairs and modernizing.

The report, in part, stated: "On the basis of the information made available to us and further developed in this report, the proposal to acquire the Bishopric plant would seem unusually attractive. Few businesses offer such excellent profit prospects as those promised for the Bishopric operation after conversion, and in view of the buoyant market for sodium sulphate, the province would seem well advised to proceed with the purchase."

To Double Capacity

Mr. Kuziak said study also revealed that if Saskatchewan could purchase Natural Sodium Products Limited for $350,000 and re-convert the Bishopric plant, installing Saskatchewan Minerals patented evaporators in it, capacity of the plant could be doubled and within four years net enough to completely repay the purchase price.

He said the Board of Saskatchewan Minerals then recommended that if management could get the co-operation of the different Kraft paper mills to sign contracts to purchase all salt production from Bishropic during 1955 and 1956, that the purchase be concluded and reconversion be commenced immediately.

Mr. Kuziak said Kraft pulp mills were anxious to obtain this additional production and signed contracts for all production for the next two years, assuring themselves of salt cake supplies and also assuring Saskatchewan Minerals of a very favorable operation and return on the investment.

Negotiations were reopened with Natural Sodium Products Limited for the purchase of the plant at Bishopric, and the purchase was finally made at the suggested figure, which included assets of anodther less valuable plant the firm owned at Alsask. As Saskatchewan Minerals purchased the plants at Bishopric and Alsask with the cash depreciation reserves built up at Chaplin, Mr. Kuziak said, the government was not called upon to provide any capital money for the purchase.

Over $500,000 Profits

Mr. Kuziak said that on an investment of $1,000,000 the corporation had turned in well over $500,000 to the government in net profits, accumulated over $200,000 in unused depreciation reserves, and paid royalties to the government in excess of $175,000, making a total return to the government in excess of $900,000, or a repayment of greater than 90 per cent of the investment. In addition, the industry had built a thriving community out of a quiet little hamlet, provided employment, and brought in over $5,000,000 worth of new wealth.

Alberta's First Steel Mill

ALBERTA'S first steel mill will be in operation by the end of 1955, says the Alberta Newsletter.

A $2,000,000 project, the mill will combine the operations of a steel melting plant and a rolling mill. Scrap steel will be melted in an electrical furnace of Italian design that is being made in England, while molten metal will be rolled into structural steel bars, reinforcing rods, and channel and other small types of beams. Natural gas will be used for fuel.

Premier Steel Mills Ltd. will operate the plant and develop markets in Alberta, eastern and northern British Columbia, and western Saskatchewan. Capacity will be 30,000 tons a year and 100 persons will be employed.

Three contractors will build the plant. Poole Construction Co. Ltd. has been awarded the contract for excavation and foundations, Precast Concrete Ltd. will erect the concrete columns, and C. W. Carry Ltd., of Edmonton, is the steel contractor.

A Devon Construction Co. Ltd., crew commences construction on a new standard highway into the American Metal Company's several-months-old base metal strikes north of Newcastle, N.B. The Fredericton company was awarded the contract to grade and gravel the first half of the new 15-mile highway linking the Chaplin Island Road, near Newcastle, with Heath Steele Mines, Ltd., proposed mill site at North Little River. Costs of the highway and two bridges to be built by the provincial public works department at an estimated cost of $800,000 are being shared by the Government and the American Metal subsidiary.

N.B. Travel Bureau Photo

ROAD BEING BUILT TO CONNECT NEWCASTLE, N.B., WITH HEATH STEELE MINE

DEVON Construction Co. Ltd., this city of Fredericton, N.B., has been awarded a $170,525 Public Works Department contract for construction of 7.6 miles of road into the American Metal Company's several-months-old base metal strikes north of Newcastle.

Lowest of several unit-price bids received, the contract covers the estimated cost of grading and gravelling half of a 15-mile highway linking the Chaplin Island Road, near Newcastle, with the Heath Steele Mines, Ltd., proposed mill site at North Little River.

Construction of a bridge connecting the new highway with the Chaplin Island Road by the department's Bridge Division is already well underway, and tenders will be called later for constructing the final half of the road into the mine. Erection of a second and larger bridge over the Northwest Miramichi River on the final stretch by the Bridge Division will complete the over-all Government-company financed project.

Letting of the Devon Construction contract followed Premier Flemming's earlier announcement that the New Brunswick Government had entered

A bridge crew lowers a form into a coffer dam of the Rolphe Bridge connecting the Chaplin Island Road with the first half of the new 15-mile standard gravel highway into the Heath Steele Mines, Ltd., Little River base metal mine site.

—N.B. Travel Bureau Photo

into an agreement with the American Metal subsidiary to build and share the cost of a standard gravel highway and two bridges to link Newcastle with the Heath Steel camp.

Under the agreement, Mr. Flemming explained, the $100,000 first (Rolphe) bridge and $700,000 highway and second (Payne) bridge will be financed by Heath Steele, but that the province is assuming half the cost of the Rolphe bridge within one year after its completion, plus half the 15-mile highway construction and Payne bridge costs within one year after the company goes into full production.

The departmental bridge and highway undertaking is in keeping with the provincial government's policy of giving all possible assistance to companies opening up New Brunswick's newly-found mineral resources, he said, and similar in scope to a highway project undertaken for Brunswick Mining & Smelting Co. Ltd., at Bathurst last year.

Total weight of the platinum metals ultimately recovered from the Sudbury Basin ores in 1953 was 270,000 ounces. Raw ore is mined by Inco in the Sudbury area at the annual rate of 13,500,000 tons.

Canadian Testing Laboratories Ass'n Adopts Code of Ethics

A CODE of ethics designed to protect the customer took top spot on the annual meeting of the Association of Canadian Testing Laboratories held at North Bay, Ontario with member laboratories from coast to coast in attendance.

"A member shall act with fidelity to public needs," the code of ethics states, "and with devotion to the high ideals of personal honor and professional integrity."

Two special clauses ensure to the customer first quality service, and the careful attention his work requires. "A member shall sign or seal only those plans, specifications, and reports actually made by him or under his personal supervision and direction. A member shall undertake only that work which he is competent to perform by virtue of his training and experience."

"Sharp practices and low grade skills will not be tolerated by A.C.T.L.", declared John Burgener, public relations chairman. "The code calls for honest advertising, loyalty to employer and employee, and the square deal the customer has a right to expect. Association members look forward to the day when clients will insist that their work goes to laboratories who belong to the group," he said.

At the annual meeting the members exchanged their ideas on testing techniques. They brought their methods up to date and discarded obsolete processes.

Officers elected for the coming year include: president, J. White, Haileybury; vice-president, Dr. Kerr Lawson, Swastika; secretary-treasurer, W. Gerrie, Swastika.

DOMINION RUBBER COMPANY ANNOUNCES APPOINTMENT

In an announcement made by G. B. Rutherford, vice-president and general manager, Mechanical Goods Division, Dominion Rubber Company Limited, John C. Alexander has been appointed assistant general manager. Mr. Alexander joined the company in 1936 at Winnipeg and he was appointed general sales manager of the Mechanical Goods Division in 1949, which position he will continue to occupy in addition to his new responsibilities.

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CAPITAL REPORT

by M. L. SCHWARTZ
Ottawa Correspondent

OTTAWA—Realizing that this country has not put as much effort and money into plans to develop the north as Soviet Russia and the Scandinavian countries, the government is now planning to follow a much more aggressive, down-to-earth policy, for quicker development of the whole north country. This, of course, can be of more than passing interest for the mining industry.

The Government has been under severe criticism. MP after MP has called in the House of Commons for action, not promises. The demands have been for improved and cheaper transportation, power developments, greater population, lower taxes, etc., and cooperation with provincial authorities to uncover the possibilities for oil, mining, etc., and in general to open up this vast, potentially rich country.

"What we have had as developments in the north up to now that have attracted people other than the natives have been mining developments only," a spokesman for the government declared.

"We have now prepared plans and are studying the possibilities of improving transportation in the north because transportation is the key to economic development," he said, indicating that the administration is studying not only air transportation, but land transportation too.

The administration is also surveying road construction. A highway from Hay River or somewhere on the Mackenzie highway to Mills Lake, farther down the Mackenzie River, is being studied.

Geological surveys are being carried on in the north "in a very substantial way" this year, the spokesman said. The first thing to do is to bring down the cost of living in the north, he said, pointing out that cost of air travel has been reduced and freight rates lowered.

"Other possibilities are being looked into, such as allowing longer time for depreciating the cost of power plants in the north. Another thing often thought of, but to which we have not yet been able to give a practical answer, is whether it would be possible to adjust taxes to the parallel of latitude on which an industry is situated or where an individual lives."

In short, efforts are being directed to creating an economic climate which will attract many more Canadians to the vast natural resources of the north.

Wholesale Price Trends Are Rising

WHOLESALE PRICES of iron and its products continued an upward trend throughout the first third of 1955, rising from 214.5 in January to 218.2 in April, based on 1935-39 being 100. This is just the opposite to the trend of a year ago when such prices declined steadily month after month, falling from 216.3 in January to 214.2 in April.

Wholesale prices of non-ferrous metals and their products also advanced steadily in this period, rising from 170.6 in January to 183.8 in April. A year ago the rise was from 165.6 in January to only 167.6 in April.

Prediction On Titanium

DR. K. W. DOWNES, chief of the Federal Mines Department's Mineral Dressing and Process Metallurgy Division, and who heads research as well as test work on metallic ores, predicts that titanium will "become a most important metal to the industry of this country."

Present progress in the upgrading of Canadian titanium ores indicates they will play a prominent role in Canadian industry, but he cautioned that though Canada has the largest deposits in the world of basic titanium ore "ilmenite", application of the ore is still in the experimental stage. Commercial production of titanium has been under way for only about a decade, but it is carried on extensively in the United States.

Dr. Downes emphasized that the metal has a strength-weight ratio about twice that of steel and a corrosion resistance that under some circumstances is "phenomenal" so that it is likely to play a prominent part in the Canadian defence effort and in the chemical industry. He forecast that titanium will, in time, become an increasingly important metal in the production of jet aircraft engines, frames and naval vessels.

Dr. Downes said that titanium ore is currently being "upgraded" at the Mines Branch in Ottawa and in a plant in Quebec.

News Roundup

THE GUARANTEED annual wage issue is being studied seriously by some labor leaders in the mining industry . . . Dr. O. M. Solandt, chairman, Defence Research Board, believes the work of the Board could easily be turned to peace time purposes if a real peace were achieved . . . Canada's imports of precious metals, except gold, are increasing in value so far this year, according to the latest official count . . . Until March 31, 1956, Canada's tariff treatment for ingots, blooms, slabs, billets, of titanium or of titanium alloys, for use in Canadian manufactures will be: British Preferential Tariff, free; Most-Favored-Nation Tariff, free, and General Tariff, 25%, and in the same period, tariff treatment for electrolytic copper powder, electrolytic iron powder, for use in Canadian manufactures, will be BPT, free; MFNT, free, and GT, 10% . . . Eric S. Fry, who spent 31 years with the Department of Mines and Technical Surveys, and its predecessors, has retired, leaving behind a record which may never be equalled and the story of whose accomplishments in opening Canada's north country by air could fill many pages. Mapping a vast country in his pioneering days in open-cockpit aircraft was only one of his deeds; these early day maps are still the only guide to wide stretches of the frontier land. He has flown, canoed, portaged, etc., to carry out his operations. A native of England, he first spent his years in Western Canada working on a farm, beginning his amazing surveying career in 1910. Though officially retired, he is now taking on responsibilities with a firm doing work connected with continental air defence . . . A new series of filmstrips about Canadian occupations, sponsored by the Department

of Labor, is now available, including one on Careers in the Engineering Profession and another on Geology as a Career and Mapmaking, Field Surveys . . . Commodore John M. Leeming, who accompanied HMCS Labrador on her historic trip through the Northwest Passage, told a meeting here that he believes the Russians are "well advanced in their knowledge of the north" . . . No new gold mines were brought into production in Canada last year when exploration and development continued to be very limited, federal officials report, adding that owing to the high premium on the Canadian dollar, the average Mint price of gold was $34.11 during the past year, the lowest figure since 1933. Incidentally, gold was fourth in value of output among Canadian minerals in the past year and Canada held second place in the free world output, South Africa being first with about three times Canada's production . . . Organized labor in Canada is urging the Canadian Government to do something about replacing U.S. coal imports in the domestic market with coal produced in Western Canada.

BUSY MINING SEASON INDICATED FOR NORTHWEST TERRITORIES

A record season for the mining industry is indicated by heavy orders being placed by northern mining companies, reports G. H. Finland, secretary-manager of the Alberta and Northwest Chamber of Mines and Resources.

Gulch Mines has announced plans to sink a shaft to 500 feet on its Uranium City property and at Lorado uranium mine, Beaver Lodge, good progress is announced on a shaft-sinking job, Mr. Finland says.

"A great deal of activity is reported from the Uranium City area," he says. "Nicholson is shipping ore over the ice to Eldorado, thus making another producer of uranium ore. National Exploration and Pitch Ore is active with underground exploration in areas where large ore bodies are good possibilities. Nesbitt Lake is also planning to sink a shaft to carry on extensive underground work."

Reports from Pelley River, in the Yukon, says Mr. Finland, indicate an active season at Prospectors Airway property, where a new lead-zinc mine is being established.

SASKATCHEWAN OIL PRODUCTION DOUBLED IN 1954

Saskatchewan's crude oil production during 1954 totalled 5,255,614.38 barrels, almost double the 1953 total of 2,791,482 barrels according to a report issued recently by the provincial mineral resources department. The report also noted that natural gas production in 1954 totalled 4,958,079,010 cubic feet, more than three times the 1953 output of 1,620,478,920 cubic feet.

PRODUCTIVE CAPACITY OF PLANT AT KITIMAT TO BE DOUBLED

Plans to bring the productive capacity at Kitimat, B.C., to 330,000 tons by 1959 have been announced by Nathaniel V. Davis, president of Aluminum, Ltd., Cost of the new program will be $190,000,000.

Present capacity of the smelter is 90,000 tons annually, work is already underway to raise production to 150,000 tons, and the new plans will add another 180,000 tons annually.

Powell Rouyn Gold Mines, Quebec, will cease operations when broken ore reserves of 140,000 tons have been cleaned up, possibly in another year, J. C. L. Allen, president, has announced.

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Men... IN MINING

Dr. Kenneth Downes Succeeds R. J. Traill In Federal Department of Mines

DR. KENNETH W. DOWNES, Mines Branch engineer, has been selected by the Civil Service Commission for promotion to the post of chief of the branch's Mineral Dressing and Process Metallurgy Division, Mines and Technical Surveys Minister George Prudham announced. Dr. Downes succeeds R. J. Traill, who has retired on superannuation.

In his new position Dr. Downes will direct the department's research and test work on metallic ores.

Since 1947 when he joined the Department he has conducted and supervised research in extractive metallurgy, with special attention to gold ores, production of high-purity titanium dioxide from ilmenite, and the production of elemental sulphur from pyrite and pyrrhotite. The latter development is of more than usual significance as it shows that elemental sulphur, of which Canada imports large tonnages, may be obtained by a simple process from pyrrhotite which occurs abundantly in this country and which has hitherto been regarded as waste material.

A native of Winnipeg, Dr. Downes graduated from the University of Manitoba in 1934 with a M.Sc. degree, having specialized in physical chemistry. After graduation he joined the Hudson Bay Mining and Smelting Company at Flin Flon, Manitoba, as research metallurgist and during the next six years was engaged in the development and improvement of a number of zinc refining processes.

In 1940 he joined the R.C.A.F. as an aircraft maintenance engineer assigned to the Empire Air Training Plan. He was in command of a number of aircraft maintenance units and retired with the rank of squadron leader.

At the end of the war he continued his studies, this time at McGill University, and received his Ph. D. degree in 1947.

Dr. Downes is an active member of the Chemical Institute of Canada, the Professional Institute of The Public Service, and is chairman of the Extractive Metallurgy Division of the Canadian Institute of Mining and Metallurgy.

DR. KENNETH W. DOWNES

H. H. HUESTIS HEADS BETHLEHEM COPPER CORP. OF VANCOUVER

H. H. "Spud" Huestis, widely known prospector and mining man, is president of the newly-formed Bethlehem Copper Corp. of Vancouver which is exploring a large-scale copper open pit prospect near Ashcroft, B.C. J. A. McLallen, Vancouver lumberman, is chairman of the board. Other directors are Hugh A. Martin, one of the two owner-partners of Marwell Construction Co.; Donald L. Farris, president of Beaverlodge Uranium Mines and J. D. Rochfort, vice-president, well known prospector. Dr. W. Harrison White, associate professor of geology at the University of B.C., is in charge of technical operations.

COTE NAMED ASSISTANT DEPUTY MINISTER OF NORTHERN AFFAIRS

Appointment by the Civil Service Commission, effective July 1, of Ernest Adolphe Cote as assistant deputy minister of northern affairs and national resources, is announced by the minister, Hon. Jean Lesage.

Mr. Cote, formerly of the Department of External Affairs, succeeds Maurice Lamontagne, who has been appointed to a position in the Privy Council Office.

In his new position Mr. Cote will, among other things, have particular responsibility for work relating to water resources, including the administration of the International River Improvements Act which was recently approved by the House of Commons, and questions relating to boundary waters. Mr. Lesage said his work during recent years in the Department of External Affairs would particularly fit Mr. Cote for these responsibilities. As head of the American Division of that department he has dealt with many matters relating to boundary waters and has acted as counsel for Canada in several cases that have come before the International Joint Commission since 1953.

Mr. Cote was born in Edmonton, Alberta, on June 12, 1913. After secondary schooling at the Edmonton Jesuit College he obtained the degree of B.Sc. from Laval University in 1931 and served in the Alberta Provincial Civil Service from 1931 to 1935. He then attended the University of Alberta where he was given an LL.B. in 1938 and was called to the Alberta bar in 1939. He joined the Royal 22nd Regiment as a lieutenant in 1939, served in the United Kingdom and Northwestern Europe and was discharged in 1945 with the rank of colonel, after having been awarded the MBE and mentioned in despatches. Mr. Cote joined the Department of External Affairs in July, 1945.

J. C. MacLEAN NAMED PROPERTY SUPT. OF "H.B" MINE AT SALMO

Consolidated M. & S. Co. has appointed J. C. MacLean property superintendent of its newly-reopened "H.B." Mine at Salmo. Mr. MacLean has been at Cominco's Tulequah operation. Mine superintendent at the H.B. is H. G. Barker from the Sullivan Mine at Kimberley, B.C. Another Kimberley man, H. J. Chalmers, is concentrator superintendent. H. W. Beckett of the Trail engineering staff is superintendent of maintenance.

Vancouver Machinery Depot, Ltd. Names F. G. Pearce Sales Manager

A WIDELY - EXPERIENCED mechanical engineer and sales engineer who has specialized in the industrial-commercial equipment field in Western Canada for 15 years, has been appointed sales manager of Vancouver Machinery Depot, Ltd.

He is Frederick G. Pearce, P. Eng., who has joined V.M.D. from Vancouver Engineering Works Ltd., an associate company, where he was assistant superintendent since 1951.

Born in Moose Jaw, Mr. Pearce went to the West Coast in 1925, received his education in Victoria and Vancouver, and was an honors graduate in engineering from University of B.C. in 1940.

When he left university, he launched his business career as a development engineer with Sherritt-Gordon Mines, in Manitoba.

Mr. Pearce returned to the West Coast during the Second World War to become chief tool design engineer for Boeing Aircraft, Vancouver. He joined Vancouver Engineering Works Ltd. in 1945, first as a machine design engineer, then chief engineer, and finally assistant superintendent.

As well as design engineering and sales engineering, Mr. Pearce has specialized in major machinery and equipment installation and recent key projects he has been associated with include the multi-million dollar John Hart, Bridge River and Kemano power developments in British Columbia.

Mr. Pearce is a member of the Association of Professional Engineers of British Columbia, and the Canadian Institute of Mining and Metallurgy.

He reports that Vancouver Machinery Depot Ltd. is consolidating plans for major sales and service expansions throughout Western Canada, "with increased emphasis being placed on in the field facilities."

H. D. FOREMAN CHOSEN MANAGING DIRECTOR CANAM COPPER CO. LTD.

H. D. Forman was in the news three times during July. He was appointed managing-director of Canam Copper Co. Ltd. following the assumption of financing and management by Mogul Mining Co. of Toronto. Mr. Forman was elected to the directorate of Yale Lead & Zinc Mines Ltd. of which he has been general manager for some years. His official position with Yale is now managing-director. At the annual meeting he was elected to represent Toronto capital on the board of National Explorations Ltd. Mr. Forman is well known in B.C. mining achievement as the mining engineer who carried Torbrit Silver mine at Alice Arm through the final development stage and mill construction. He is a graduate of the University of Alberta with degree of B.Sc. (Arts). Recently Mr. Forman took up residence in Vancouver.

J. M. BUCHANAN ASST. SUPT. OF COMINCO ZINC DEPT. AT TRAIL

J. M. Buchanan has been appointed assistant superintendent of the zinc department of Cominco at Trail. After being appointed a method study engineer in 1951, Mr. Buchanan returned to the zinc department in 1953 as special assistant to the superintendent.

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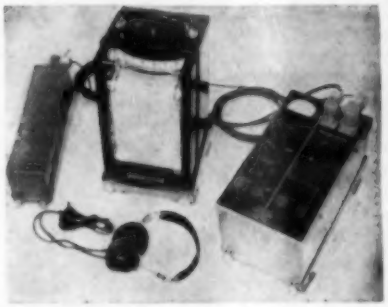

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Canadian General Electric Names New President and Chairman

H. M. TURNER

J. H. GOSS

THE BOARD OF directors of Canadian General Electric Company announced the election of Harold M. Turner as chairman of the board. Mr. Turner, who has been president of the company since 1946, is succeeded as president and chief executive officer by James H. Goss, a widely experienced electrical industry executive who most recently held top managerial appointments with the General Electric Company in Louisville, Kentucky.

In his new post, Mr. Turner will be primarily responsible for top-level public and government liaison.

Mr. Turner joined General Electric in Schenectady in 1921 and in 1926 was transferred to Canadian General Electric Company. In 1936 he was appointed comptroller, in 1942 a vice-president and in 1946, president. He is a director of the Canadian Bank of Commerce, Canadian Pacific Railway, Underwood Limited, and the Mutual Life Assurance Company of Canada.

Mr. Goss joined General Electric as a student engineer on the company's famed 'Test' Course in Schenectady in 1931. He was transferred to the Lynn, Mass., plant of the General Electric Company in 1931 in the Motor and Instrument Department and held various engineering assignments. From 1947 to 1951 he served as assistant, and later as manager of engineering in the Industrial Control Department in Schenectady. In 1951 he was transferred to the Small Appliance Department in Lynn, Mass., and later in the same year to the Major Appliance Division in Louisville, as division manager for manufacturing. On January 1, 1953, he was made general manager of their Home Laundry Department from which position he moves to his present appointment.

Appointments in Yukon Territory Announced

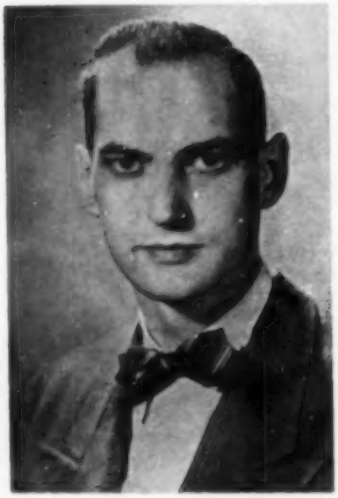
NORTHERN Affairs Minister Jean Lesage has announced that Wilfrid G. Brown, commissioner of Yukon Territory, Whitehorse, has been appointed to succeed Fred Fraser as chief of the Territorial Division, Northern Administration and Lands Branch, at Ottawa. F. H. Collins, chief treasury officer of the Department of Northern Affairs and National Resources, will succeed Mr. Brown as commissioner of the Yukon Territory. The appointments result from the retirement of Mr. Fraser as chief of the Territorial Division.

Mr. Brown brings to his new office an intimate knowledge of territorial administration, having been successively, stipendiary magistrate at Fort Smith, N.W.T., administrator of the half million square miles of the Mackenzie District, and since 1952, commissioner of the Yukon Territory.

Mr. Collins has been in the Yukon Territory on three missions of varying length. He has for several years acted as general financial adviser to the Yukon Territory Government and is familiar with the administration.

Wilfrid G. Brown, who was born in Moosomin, Saskatchewan, in March 1906, is a graduate in law of the University of Saskatchewan. He practised law in Regina for ten years and served overseas for five years in the Second World War. He joined the federal department in 1950 as stipendiary magistrate at Fort Smith, N.W.T., and in 1951 became Administrator of the Mackenzie District. In November 1952 he was appointed commissioner of the Yukon Territory.

NAMED ASSISTANT SALES MANAGER DOW CHEMICAL OF CANADA LIMITED



L. KENNETH LICHTY

Appointment of L. Kenneth Lichty as an assistant sales manager is announced by R. H. Wright, sales manager of Dow Chemical of Canada, Limited.

Mr. Lichty joined the Dow organization in 1950 as technical sales engineer for the mining industry. He had been connected with various technical aspects of mining for the previous twelve years and during that time specialized in research. With Dow he travelled extensively throughout Canada and is well known for his work with flotation chemicals.

In 1952 Mr. Lichty was appointed manager of Dow's Coatings and Solvents Sales Division and from 1953 to 1954 was also manager of the Glycols Sales Division. In addition to these duties, for the past year he acted as special assistant to the sales manager.

Mr. Lichty is a member of the Canadian Institute of Mining and Metallurgy and resides in Toronto.

E. J. COLTHORP APPOINTED DISTRICT SUPT. OF MINES BY COMINCO

Cominco announced the appointment of E. J. Colthorp as district superintendent of mines, north central district. Mr. Colthorp joined the company in 1929 as a surveyor's helper at the Sullivan mine. In 1939 he was appointed assistant chief surveyor at Kimberley, becoming assistant mine foreman in 1940 and mining engineer in 1943. In 1948 he was appointed assistant operating superintendent. In his new post, Mr. Colthorp succeeds J. E. McMynn who is being assigned to special duties in administrative controls at Trail.

WESTINGHOUSE APPOINTMENT

The election of D. C. Marrs to the post of assistant comptroller at the Canadian Westinghouse Company has been announced.

Mr. Marrs joined Westinghouse in 1936 and with the exception of wartime service with the R.C.A.F., occupied various accounting and treasury department positions until 1952 when he undertook a special assignment with the Canadian Westinghouse Supply Company.

Mr. Marrs was named general auditor for that firm in 1953 and last year was appointed operations manager.

GEOLOGY REPORT ISSUED ON LITTLE LONG LAC AREA, ONTARIO

A comprehensive geological report on one of Ontario's important gold-mining areas is being distributed by the Ontario Mines Department. The report on Ashmore Township, at the east end of the Little Long Lac region was compiled jointly by two of the department's staff geologists, the late Dr. H. C. Horwood and E. G. Pye, now the resident geologists at Port Arthur.

Dr. Horwood made a preliminary survey of the township in 1941 and did further work between 1946 and the time of his death in 1948. Pye completed the survey work in 1950 and subseqnuently compiled all the data which the two had gathered.

The report outlines the history of mining development in the area, gives a detailed analysis of the geological srtuctures, and describes the mining properties which have been developed.

The report which will be bound as Part Five of Volume 60 of the Department's annual reports is accompanied by a colored geological map of the township and level plans of the MacLeod Cockshutt and Hard Rock Mines.

Ontario Mining Act Changes Affect Staking, Recording

THE new programme of mining access road construction, which has been given approval, will almost double the mileage of roads which have been built during the last four years by the Ontario Mines Department under its construction programme, announces Mine Minister Phillip T. Kelly.

The thirteen roads which are included in the new schedule total 242.5 miles. Up to the end of 1954, 300 miles of roads had been built or were under construction.

The longest of the new roads is one which will give a direct connection between the town of Hornepayne and Highway No. 11. It is to be 42 miles long. Until now Hornepayne has had no road contact whatever with the outside world.

Second on the list is a 32-mile road to link the town of Nakina on the C.N.R. with Geraldton. This is likely to be a two or three-year project, but when it is completed Nakina, too, will have its first road outlet.

The third project will consist of the grading of the six-mile stretch of road from Sioux Lookout to Alcona situated on the Canadian National Railway line.

The rehabilitation of the existing road running from Mattawa to the Temiskaming Road, a distance of 26 miles, is another project which will be undertaken.

Clearing and some grading on a 12-mile stretch running from Palomar to Foleyet will soon be underway. A road has been completed as far as Palomar and the completion of the proposed extension to Foleyet will give that town its first road connection with the outside world.

Thirty-two miles of the road running north from Hemlo to Manitouwadge, which gave access to the very important base metal deposit there, has been taken over from a pulp and paper company. Improvements to this road are also on the list of the year's projects. This 32-mile stretch of road is now to be improved or re-built to a standard which will permit its use by heavy trucks.

The seventh project to be carried out will be the clearing, possibly by contract, of a 12-mile road link between Seagram and Caramat. When this link is completed there will be easy access from the north via privately owned roads to within 10 miles of the Wilroy mining property. It is expected that there will eventually be a direct connection between highways 11 and 17 through the Manitouwadge area.

Improvements to the 32-mile road in the Blind River uranium belt will give a through route from the Algoma Mine property on Quirke Lake to Highway 17.

Keeping Tab on Mining in British Columbia

Pioneer Gold—

ANNUAL report of Pioneer Gold Mines of B.C. Ltd. discloses a 47 per cent increase in tonnage and 10 per cent boost in grade of ore reserves as at March 31, 1955.

Reserves at that date were 283,520 tons proven ore averaging 0.667 oz. gold per ton. One year before the figure was 138,846 tons averaging 0.604 oz. per ton. New ore developed during the year was 242,851 tons and 98,177 tons were mined.

Net profit was $106,406, compared with $329,329 in the previous year. The increase in operating costs of $283,466 reflected the fact that in the year under review all but a small portion of development work was a current operating expense whereas in the year before practically all development work was of a capital nature.

Net current assets at March 31, 1955, were $1,069,596 against $1,025,302 one year before.

Cominco—

"H.B." zinc-lead mine of Consolidated M. & S. Co. of Canada has been shipping concentrates by truck 44 miles to Trail Smelter since late in May. Some 150 men are employed at the mine, seven miles from Salmo.

The 1,000-ton daily capacity concentrator was completed in 1953 at a cost of $3,000,000 but because of low metal prices the property was not brought into production until this year.

The company reports that the mine and concentrator are on a 24-hour schedule with the mine on a five-day week and the concentrator on a seven-day week. The large tonnage of low grade ore lends itself to long blast hole drilling. Ore raises carry the broken ore down to a 4,000 ft. haulage tunnel at the 2,800 ft. level. A 40 h.p. diesel locomotive is being used to haul the ore to the concentrator.

Giant Mascot—

Operating profit of $546,691 is reported by Giant Mascot Mines Ltd. for eight months of the current fiscal year to May 31, compared with $265,205 in the same period of the previous year. The mill averaged 540 tons daily compared with 510 tons daily.

Production of lead for the period was 1,315,000 pounds compared with 1,000,000 pounds. Zinc is relatively minor in quantity amounting to 132,000 pounds compared with 100,000 pounds. There was also produced 21,000 pounds of copper compared with 15,000 pounds and 12,000 ounces of silver vs 10,000 ounces.

An increase in operating costs to $4.01 per ton from $3.77 per ton was largely due to an accelerated ore breaking program, said B. H. Gunning, managing-director. Broken ore reserves as a result were 40,000 tons at May 31, 1955, more than double the figure at May 31, 1954. A substantial reduction in operating costs has already been brought about by the switch from diesel to hydro power in April.

Shaft sinking to open the new low 900 feet level has been completed and extraction of ore from this new level started in late July. Mr. Gunning said that about 80 per cent of the tonnage milled during the eight months to May 31, 1955, was mined from the footwall and nose orebody between 700 and 800 levels. The ore zone showed good width and values were above the average in the upper levels of the mine.

Granduc—

Granduc Mines Ltd. reported that in first work this season on its large-scale copper prospect in northwestern B.C. the West orebody was traced for an additional 400 feet to the north with widths in excess of 100 feet. L. T. Postle, president, said the average width of this orebody, previous to this year, had been 25 feet.

The East orebody has been extended by 200 feet this year but farther to the north the copper content was below ore grade.

A deep diamond drill hole demonstrated the persistence of the ore to vertical depth of 730 feet below the tunnel.

A road has been built to the portal of the upper tunnel, 500 feet above the main tunnel. The tunnel has been started and at last report was in 75 feet.

Bralorne Mines—

Production of 30,971 oz. gold from 85,837 dry tons milled, an average of 0.36 oz. per ton, is reported by Bralorne Mines Ltd. for the first half of 1955. This compared with 34,021 oz. from 92,225 dry tons in the first half of 1954, an average of 0.37 oz. per ton.

An official report said drifting on the "77" vein on 27 level was continuing to develop commercial ore. The crosscut on 31 level had intersected both 79 and 77 veins, both of which were mining width and commercial value where cut. Sideswiping was in progress on this new low level preparatory to drifting west on the 77 vein, which on the levels above has been shown to be Bralorne's richest source of gold.

The Queen Shaft was 25 feet below the 32 level at June 30 with the station on that level cut and the transfer raise from 31 to 30 level completed.

The 2002 drift west off the Taylor (Bridge River) crosscut is being continued. Values have been erratic and at the close of the quarter the vein was full drift width.

Western Exploration—

Presence of high silver values 450 feet on the dip below similar values found a year ago by diamond drill has been confirmed by Western Exploration Ltd. at its Silverton, B.C. mine.

In the year ended April 30, 1955, the company drove 2,300 feet of crosscut as a continuation west of the No. 7 tunnel of the Mammoth mine. The objective was high silver values located by diamond drill a year ago. No mining was done during the year.

A. M. Ham, general manager, reported that the face of the long crosscut, named the Lower Tunnel, was under and a little west of the westerly diamond drill holes which located the high silver values. The face was in ore, he said, and the grade was good, with the silver values comparing favorably with those obtained in the diamond drill holes above.

A drift will be run on this ore to learn of any connection it may have with the orebody above and to the east of the present face. It is also planned to raise to the ore found last year by drilling, a distance of 450 feet on the dip of the vein. This raise will connect with the Monarch tunnel, providing ventilation and will be the main raise to handle ore from the new orebody.

Operating entirely on ore from nearby mines pending sufficient recovery in the price of zinc to warrant resumption of mining its own ore, Western Exploration reports a net profit of $28,458 for the year ended April 30 after $24,169 for depreciation, and $4,484 for maintenance at the company's non-operating mines. This reduced deficit to $217,812. In the preceding year, also operating on customs ore, net profit was $17,089.

United Estella

First assays reported by United Estella Mines Ltd. of samples of the orebody reached by crosscut on the 6100 elevation level beyond No. 2 fault confirmed the high grade character of the occurrence. B. I. Nesbitt, consulting geological engineer, says the weighted average across a true width of 35 inches is 13.8 oz. silver per ton, 44.5 per cent lead and 8.6 per cent zinc.

The new level at 6,000 ft. elevation was being driven ahead to cut this new ore block on the southeast side of No. 2 fault. Mr. Nesbitt said that if the orebody maintained the same rake it has had in all the upper levels and is not seriously disrupted by faulting, this level could have a horizontal length of approximately 500 feet in the ore beyond No. 2 fault.

Recent work has shown that the orebody had a vertical displacement of about 60 feet by the faulting and that the Estella or 6100 level penetrated the top of the ore in its new position. There were definite indications in the crosscut that the orebody will be found to widen rapidly with depth.

Bethlehem Copper

Bulldozer stripping is being carried out by Bethlehem Copper Corp. Ltd. of Vancouver on the first of four known copper-bearing zones on a 100-claim property near Ashcroft, B.C. The large-scale open pit prospect was staked in April on the slope of Forge Mountain in Highland Valley. Both transcontinental railways run nearby.

The backers believe the property has prospects similar to those of the great open pit copper operations in the U.S. They have set their sights on finding ore to warrant an operation in the order of 10,000 tons daily.

Topography is suited to an open pit operation, with the showings on the eastern slope of the mountain which rises 1,000 feet above the valley floor. Overburden is up to 20 feet thick. In addition to some high grade copper, there are widely disseminated deposits of copper in the four known zones.

Due to the nature of the occurrence ordinary sampling and diamond drilling were ruled out. A bulk sampling plant was installed and when the high grade oxidized zone had been stripped off, churn drilling was to be employed.

At last report sampling was in progress of 1½ tons from every 10 feet of a 280-foot tunnel. This was to be followed by churn drilling and bulk sampling of mineralization exposed by No. 1 trench cut by bulldozer 1,000 feet southwest of the tunnel. This trench had stripped off the overburden for 800 feet with the southeast limits still to be located.

President of the new company is H. H. "Spud" Huestis, prospector and mining man of long experience. Technical direction is being handled by Dr. W. Harrison White, associate professor of geology at the University of B.C.

Mid-West Copper & Uranium

Good copper assays have been obtained by Mid-West Copper & Uranium Mines Ltd. from re-sampling an old shaft of the CU group near Windermere in the East Kootenay district.

Two samples were taken across eight feet at 30 feet from the surface in a shaft 70 feet deep which the crew was equipping with ladders for re-examination. One of these samples gave assays of 4.7 per cent copper and the other of 4 per cent. A third sample across about the same width taken from the surface 200 feet south of the shaft on the strike of the vein also assayed 4 per cent copper.

The company has full title to 16 claims comprising the CU property, once known as the Swansea Copper Mine. The work is under the direction of Dr. A. G. Pentland, consulting geologist. Exploration of the company's Velvet Mine south of Trail is also reported to be progressing favorably.

Silver Standard

Search for ore by Silver Standard Mines Ltd. to extend the life of the main operation will be continued intensively, management states. At the

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same time the company has taken options on four B.C. properties and is engaged in uranium exploration in the province.

Exploration of the company's original extensive property is along lines recommended by Dr. Victor Dolmage. A geophysical survey is being followed by 5,000 feet of surface drilling. At last report two holes had given ore indications in a new area.

In extending the main 1300 crosscut past the fault to follow up a good diamond drill intersection there was opened an orebody 70 feet long and from 2½ to 3 feet wide which averaged 42 oz. silver per ton and 4½ per cent lead. It was planned to mine this ore soon.

Cowichan Copper

Dr. A. C. Skerl, consulting geologist, has submitted a report to Cowichan Copper Co. Ltd. giving an estimate of reasonably assured tonnage at its Vancouver Island property and making recommendations for further development.

In the main orebody there is a reasonably assured tonnage of 140,000 tons between the surface and 50 feet below the 1200 elevation tunnel and extending 130 feet horizontally south from the flat fault, Dr. Skerl said. The grade could average 6.2 per cent copper, he said, if the shipments could be considered representative but at present this value can only be considered probable for the block as a whole.

There is indicated on the 1200 level for another 100 feet south a block of possible ore that could amount to 50,000 tons if it is found on the 1290 level and shown to continue to the surface. The grade, however, will be much lower and from present evidence around two per cent. In the north orebody there is room for a possible 50,000 tons but the development is inadequate to prove this tonnage and at present the suggested grade is only 1.5 per cent.

In summary Dr. Skerl says there is a total of 2,265 feet of drifts and crosscuts on the 1200 level and 400 feet on the 1290 level. There is also over 800 feet of raising between the levels. A total of 5,272 feet in 26 diamond drill holes underground and 1,545 feet in eight holes on surface have been drilled. At least 20 distinct anomalies were located by a 1953 survey. A number of these have been tested by bulldozing and in two cases by diamond drilling. Besides the main orebody and the north orebody there are six other anomalies in which sufficiently interesting copper values have been found to warrant further work.

Dr. Skerl advises that the face of the main crosscut is in position to drill a large anomaly above and that similarly the No. 2 south drift is in position to test the main east-west anomaly. He recommends also a new raise from the end of No. 1 north drift into the north orebody to facilitate further development.

Ten barge loads of crude ore sent to Tacoma Smelter in the period from January 1954 to March 1955 totalled 8,783 tons averaging 6.64 per cent copper. Total net return to the company after smelter charges and after $15,704 for water freight and other charges was $185,312 or $21.10 per ton out of a gross value of $40 per ton.

Inco Fellowships Foster Geology, Metallurgy Study

Basic research in geology and metallurgy is now going forward in five Canadian universities under a fellowship program sponsored by The International Nickel Company of Canada, Limited, to the extent of an estimated $80,000.

Since the Inco Fellowships were instituted in 1951 the fellows have been selected from among graduates by the National Council of Canadian Universities Fellowship Committee. The fellowships are tenable for three years.

The National Council of Canadian Universities Scholarship Committee has just announced three new Inco Fellowships and the renewal of five others. The new fellowships go to John T. Cumberlidge and Andrew B. Whitehead, of McGill University, and Walter Morris, of the University of Toronto.

Mr. Cumberlidge, who holds a B.Sc. degree in geology from the University of Nottingham, is registered at McGill University for an M.Sc. degree. His new fellowship studies will be into the nature of surface and strain energy in minerals which he will pursue under Dr. Vincent A. Saull, professor in the Department of Geology at McGill University. Mr. Cumberlidge's home is in Staffordshire, Eng.

Mr. Whitehead, who holds the degree of B.Sc. from the University of New Brunswick, is registered at McGill University for an M.Sc. and plans to continue for his doctorate. For his Inco Fellowship he will study quantitative detection of oxygen in metals by bombardment in cyclotron under Dr. J. S. Foster, chairman of the Deparment of Physics, McGill University. Mr. Whitehead's home is at Quinton Heights, Lancaster, N. B.

Third new holder of an Inco Fellowship, Walter Morris holds the degree of B.A. Sc. and M.A. Sc. in metallurgy from the University of Toronto. He will study X-ray diffraction of ferrous silicate slags encountered in non-ferrous metallurgy under Dr. L. M. Pidgeon, Professor of Metallurgical Engineering at the University of Toronto. Mr. Morris' home is at 182 Rusholme Rd., Toronto.

The National Council of Canadian Universities Scholarship Committee has also announced renewal of five Inco scholarships for research already under way in four Canadian universities.

EDORAN ENGAGES SECOND DRILL TO EXPLORE URANIUM PROPERTY

S. W. Jespersen, president of Edoran Oil Corp. Ltd., reports that a second diamond drill, with greater capacity, has been engaged to explore the contact zone on Claim 20 in the Cal group, which adjoins directly on to the Black Bay Uranium property. First hole will be drilled opposite the Black Bay adit. This contact zone has been marker for successful underground work in this area.

The company has engaged the services of Hopkins Exploration Consultants, to supervise operations from their Uranium City office. A complete survey has been made of the property and the new drilling test starts at once.

CANADA WORLD LEADER IN URANIUM PRODUCTION, F. R. JOUBIN PREDICTS

Value of Canada's uranium production by 1957 will be $150,000,000, and might be $200,000,000, Franc R. Joubin, president and managing director of Algoma, and managing director of Pronto, told the Montreal Institution of Investment Analysts.

He predicted that at that time the United States will be producing at the rate of $80,000,000, South Africa $10,000,000, and the Belgian Congo and Australia $60,000,000 each. U.S. production then will be about one-third of its requirements, he said.

Markets now are predominantly military, he said, but tremendous fields are opening up for motive power, sterilization of food, and medicine.

Estimated ore reserve of 535,000 tons to the 900-foot level for Chibougamau Explorers Ltd. has been shown by drifting.

Universal Decimal Classification: New Sections British Standard

BRITISH STANDARDS Institution calls attention to two new sections of the British Standard for Universal Decimal Classification, Section 622 Mining and Mineral Dressing and 623, Military and Naval Engineering. It says:

B.S. 1000 (622/623): 1955 is a new section of the English Edition (4th international edition) of the Universal Decimal Classification which is being published in parts by the British Standards Institution as B.S. 1000. It contains the full classification schedules, carefully revised from the 2nd and 3rd international editions in French and German, together with separate detailed alphabetical indexes, for the two major fields of Mining and mineral dressing, and Military and Naval engineering.

The two subjects, though not especially related, together form a convenient 50-page volume, shortly to be supplemented by the remaining sections of 62 (Engineering).

Librarians and technical experts from specialist organizations in several countries have collaborated in both fields: for (622) Mining—the Institute of Mining and Metallurgy, Jernkontoret (Stockholm), with French, German and other experts; for (623) Military and Naval Engineering — the War Office (Library), Admiralty (Engineer-in-Chiefs Department) Ministry of Supply (TPA 3/TIB, A.R.E., R.A.E., etc.) and experts in Belgium, Sweden and elsewhere.

It is believed that these new schedules will serve as a useful tool for all workers in these fields with any substantial technical literature to classify, especially if used in conjunction with the Abridged English Edition of the whole U.D.C., B.S. 1000 A, of which a second greatly revised edition will be published later this year.

Copies of this new section may be obtained from the British Standards Institution, Sales Branch, 2 Park Street, London, W.1. Price 15/-.

Alcan President Foresees Growing Demand for Aluminum

ALTHOUGH present shortages of aluminum are created by government purchases for stockpile purposes, free world production being in excess of consumption, Nathaniel V. Davis, president of Aluminum Company of Canada, told the annual meeting of shareholders, that decision of the directors to undertake the Kitimat expansion program reflects what appears to be an unrelenting demand for primary aluminum. He pointed out that "the vitality of the aluminum industry in the future, as in the past, will to some considerable extent depend on a price trend that will favor the use of aluminum as against competing metals and materials."

The expansion program, he said, is being planned on a flexible basis, so that construction can be accelerated or slowed down in accordance with the trends of demand for aluminum. "The largest and cost wise the most uncertain elements of the Kitimat development", he said, "have been completed namely the dam, tunnel powerhouse and transmission lines. As a result the further expansion now authorized or planned may be undertaken in smaller segments with considerable latitude in scheduling construction and with fewer estimating uncertainties . . . The program is to build out Kitimat to the 330,000-ton capacity on a schedule closely geared to our estimated ability to generate the capital required for expansion from within the company." Submitting preliminary figures for the first quarter of 1955, Mr. Davis said estimated net earnings amounted to approximately $9 millions or 90 cents per share, compared with $6.8 millions or 68 cents a share for the similar period in 1954.

LITHIUM ACTIVITY IN MANITOBA, NORTHWEST ONTARIO REPORTED

R. Cox, mining recorder for Manitoba, reporting a claim-staking rush in the Maskwa and Bernic Lakes area northeast of Lac du Bonnet, site of lithium deposits, says that more than 300 claims were registered with the mines branch in one week. A similar rush is reported in the Barbara Lake, Georgia Lake area, 100 miles northeast of Fort William, Ont.

MacLeod-Cockshutt Gold Mines has staked 28 claims and taken options on an additional 62 claims in this area.

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—Shakespeare (Henry VI)

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METAL MARKETS

Strikes curtail copper production adding pressure on price structure — Lead Market holds Firm — Zinc in Strong Demand — Record Aluminum Shipments.

NEW YORK—The copper strike cast a pall over the metal markets last month. Piled on top of an already tight supply situation, the walkout at three major producers brought in its wake curtailments at fabricating companies and boosted quotations on the outside market and on the London Metal Exchange. Production of lead also has been reduced by the strike and this has served to put pressure on the price structure. Zinc producers have not been directly affected by the labor disputes and consumer demand has continued good. Aluminum prices were raised 1.00 cents a pound on pig and 1.2 cents on ingot.

Called July 1 against Kennecott Copper Corporation, Phelps Dodge Corporation and the American Smelting and Refining Company, the strike is estimated to have cost the loss of more than 60,000 tons of copper during the month. There was no shutdown at the Anaconda Company where the International Union of Mine, Mill and Smelter Workers (Ind.) accepted wage increases ranging from 11½ cents to 17½ cents an hour. At this writing, Phelps Dodge has just settled while Kennecott and the union are continuing negotiations with the differences between them narrowing. There is hope for early peace in the industry.

Reflecting the squeeze on copper supplies, spot copper on the London Exchange is currently quoted at about 45 cents a pound which is 9 cents higher than the 36 cents price posted by domestic producers. However, some hard-pressed consumers in the United States are reported to have matched the London level in purchases of small lots of foreign copper in the outside market. Another indication of the market stringency is the fact that No. 2 copper wire scrap is now selling at 37 cents, higher than the official price for primary metal. Scrap bought now would be available as refined metal in about three months at a cost of about 42 cents.

Additional inflationary pressure on the copper market comes from Chile where wildcat strikes are curtailing production. Chile also is reported dissatisfied with the 36 cents a pound it gets for copper sold to American industry. Some sources indicate that the Chileans are sounding out U.S. authorities on a higher price—perhaps 40 cents—for copper. The possibility of a strike in Northern Rhodesia is another factor in the already complex copper picture.

In an attempt to ease the tight domestic supply situation, the Department of Commerce has imposed a third-quarter quota of 54,000 tons on U.S. exports of refined copper of foreign origin and tightened its existing curbs on shipments of copper scrap abroad for the same period. Previously, the Government agency permitted foreign copper raw materials to be converted into refined products in the U.S. and shipped out of the country free of all controls.

The Commerce Department said that the ceiling placed on issuance of licenses to export refined copper of foreign origin will allow exports of the material to proceed at "approximately the 1954 export rate." The agency said it is continuing its policy of banning exports of refined copper of domestic origin and unrefined domestic copper "generally will not be approved for export." Quotas for export of scrap in the third quarter will be 45 cent below the second period.

Domestic production of refined copper totalled 131,431 tons in June, the latest month for which figures are available, as compared with 135,042 tons in May. Deliveries of refined copper to domestic consumers in June amounted to 132,842 tons compared with 124,853 tons in May. At the end of June, stocks of refined copper in the hands of producers stood at 38,533 tons, a drop of 4,807 tons from the close of the previous month.

U.S. consumption of refined copper, on the basis of the fabricated products that were shipped, came to 132,489 tons in June, a gain of 19,004 tons over May and the highest figure since March of this year. The volume of new business booked by fabricators in June called for the use of 134,788 tons of refined copper, a decrease of 5,668 from the preceding month. Consumers' stocks of refined copper showed little change during the month, amounting to 327,696 tons, a rise of 353 tons over May. The unfilled orders on fabricators' books totalled 234,578 at the end of June, the highest figure since August, 1953.

MARKET HOLDS FIRM

THE STRIKE at the facilities of the American Smelting and Refining Company is estimated to have resulted in the loss of about 25,000 tons of refined lead during July. This, of course, has resulted in increased consumer demand at producers and refiners whose plants have not been affected by the shutdown. However, the pressure has not been as great as some sources had anticipated. Consumers who are in a position to wait, apparently are remaining out of the market for the time being. The price of lead is holding firm at 15 cents a pound at New York.

Talk of a higher price has been heard in the lead market recently. In London, lead for spot delivery currently is quoted at about 13.50 cents a pound. After adding import duty, insurance and other charges, the British price is equivalent to approximately 15.50 cents delivered New York, or a half cent above the domestic figure.

A major obstacle to a lead price boost at this time is the uncertainty as to whether the Government will pay more than 15 cents a pound for stockpile metal. Although producers have been offering the Government only token tonnages recently, many market observers feel that the prop of Government purchases would be necessary to maintain a higher price level. However, if demand improves at the consuming level and the London market remains above American parity, a costly settlement of the labor dispute may well result in a lead price advance.

ZINC IN STRONG DEMAND

ZINC producers have not been affected by the strike in the metal industry. Consumers are continuing to exert pressure for both Special High Grade and Prime Western zinc. When it comes to Special High, they are getting only a fraction of their requests. In order to provide for an equitable distribution of the available supply, producers for the most part are limiting their regular customers to the average tonnage that they have bought over a period of time. Newcomers and shoppers are the ones who have been hardest hit by the tight supply situation. It is reported that most current purchases are being made to fill immediate needs, although some inventory buying has been noted.

Highlighting the zinc statistics for the month of June was the sharp drop of 14,572 tons in stocks of unsold zinc carried by producers. At the end of June, producers' stocks stood at 48,612 tons as compared with 63,184 tons at the close of May and were at the lowest level since May 1952.

At the same time the figures showed slightly higher shipments in June and lower production for the month, although the average daily output gained.

Shipments of all grades of zinc in June amounted to 99,039 tons as compared with 97,572 tons in May, a rise of 1,467 tons. Production of zinc totalled 84,467 tons in June against 86,177 tons in May but average daily output in June came to 2,816 tons against 2,780 tons in the longer month of May. Unfilled orders on producers' books at the end of June stood at 57,231 tons as compared with 70,084 tons at the close of May, a decrease of 12,853 tons.

RECORD ALUMINUM SHIPMENT

THE Government predicted last month that aluminum shipments will set an all-time record of 3,7000,000,000 pounds in 1955. This is 500,000,000 pounds more than the industry had expected at the first of the year and is 700,000,000 pounds more than was shipped in 1954. Military shipments were expected to be about the same as in 1954. Primary aluminum output in the first half of this year reached an all-time high of 1,519,733,010 pounds compared with 1,430,797,636 pounds in the corresponding period of 1954. Production in the second quarter also set a new peak of 770,309,784 pounds, topping the previous quarterly high of 749,423,226 in the first quarter of 1955. Congress last month killed a bill proposing to suspend for one year import duties on aluminum and aluminum alloys.

OTHER METALS

SILVER prices climbed last month after the strike at A.S. & R. plants cut off a major source of the refined metal for U.S. industry. The curtailment upset a delicately balanced supply-demand situation at a time when silver-consuming firms were resuming after vacations and inventory-taking. Handy and Harman is currently quoting silver at New York at 90.75 cents an ounce as compared with 90.125 cents at the beginning of July and some trade sources indicate that the quotation may climb to the 91-cent level that the U.S. Treasury charges for the metal in its "free stocks". Silver producers and consumers last month debated the merits of the Silver Purchase Act in Senate committee hearings on a bill to repeal the law. There was no decision on the matter and more testimony will be heard after Congress reconvenes next January.

The platinum market displayed a firmer tone last month as the supply situation tightened. Growing scarcity of the metal reflected the drying up of Russian offerings and increased domestic industrial demand. Platinum is now quoted at about $80 to $87 an ounce. The supplier selling at $80 is offering only restricted quantities to regular customers.

Congress has virtually completed action on a bill to extend and expand the Government's mineral purchase program. Affected by the measure are asbestos, beryl, chromite, manganese, mica, tungsten and columbium-tantalum ores. The measure will continue until their original expiration dates between June 30, 1957 and December 31, 1958, purchase programs authorized in 1953 but which have already reached their original goals in several cases. The bill also calls for a new program to buy a total of 12,000 short tons of antimony.

U.S. production of titanium mill products in the second quarter of 1955 reached an all-time high of 941,602 pounds, for a gain of 144,383 pounds over the first three months of this year. Most of the increased output consisted of products needed in the manufacture of aircraft engines.

European quicksilver continued its downward trend last month with closing prices around $260 to $262 a flask compared with a range of about $276 to $278 at the beginning of July. Domestic metal was available at about the same quotation as the European brands. Spot Mexican quicksilver was not readily available with prompt metal offered at about $259 a flask.

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INDUSTRIAL TOPICS FOR... MINING MEN

Treated Timbers Give Much Longer Service in Mines

A BOOKLET issued by Timber Preservers Limited tells how wood, a universal building material, treated with the Wolmanized pressure treatment will last many years longer than untreated lumber and plywood.

Wolmanized lumber is the trade name applied to any species of wood which has been impregnated by the vacuum-pressure process with Wolman Salts preservative. However effective a preservative may be, says the booklet, it cannot provide long lasting protection unless it has been forced into the fibres of the wood by means of heat and pressure.

Wolmanized lumber, it is pointed out, naturally costs more than untreated lumber, but in the long run it is cheaper. For instance, an example of lumber used in a West Coast process industry, where decay causes serious losses in a very few years, gives the following comparion:

Wolmanized lumber in place, $136 per thousand FBM; untreated lumber in place, $100 per thousand FBM; life of treated lumber, an average of 20 years, as per service records (given extensively in the booklet); life of untreated lumber, approximately 6 years. Assuming an interest rate of 4 per cent resulting figures are: annual maintenance costs of untreated lumber 100 by .908 equals $19.08; annual maintenance costs of treated lumber 135 by .0735 equals $9.93. Savings per thousand board feet of treated lumber per year $9.15. Saving on typical Wolmanized structure of say 20,000 f.b.m. over 20-year period $9.15 by 20 (M FBM) by 20 (yrs.) equals $3,660.

The American Mining Congress is quoted as saying that untreated mine timbers last only two to three years because of the high humidity underground, which accelerates the growth of fungus and decay. By balancing the first cost of installing untreated wood plus replacement cost after three years against the use of treated wood in the first place for a permanent structure the economies of pressure treatment become clear. Ties, posts and caps, are important items regularly treated. From the service records, says the booklet, original installations are still sound and strong after 13 years arduous service.

A BIGGER, AIR-COOLED PACKAGED COMPRESSOR

A 125 horsepower electric-driven air compressor has been added to the Ingersoll-Rand line of air-cooled two-stage Type 40 stationary compressors. The new size is expected to fulfill the need of contractors and industries for a lightweight compressor of this size that can easily be moved from job to job.

Some of the new features of this unit are: single-core; horizontal-flow intercooler, new shrouding, force-feed lubrication, full free-air unloading and a new version of the famous Ingersoll-Rand Channel Valve. These and other features make the 125M compressor a neat, accessible, compact and efficient package that is easily adapted to either permanent or temporary jobs. It can be installed with a minimum of foundation, time and labour.

Either constant-speed control or dual control can be furnished. Dual control is available with either automatic or manual selection, permitting operation at constant-speed or automatic start-and-stop, whichever is deemed more economical. This unit adds a 125 horsepower unit to the type 40 line which already includes sizes of 25, 40, 50, 75 and 100 horsepower. A 4-page flier, form 3188, completely describes the new unit.

For your copy of this flier or for additional information, contact your nearest Canadian Ingersoll-Rand Branch Office, or write Canadian Ingersoll-Rand Co. Ltd., 620 Cathcart Street, Montreal, Quebec.

STANDARD PRODUCTS DIVISION FORMED BY STEPHENS-ADAMSON

Stephens-Adamson Mfg. Co. of Canada Limited, Belleville, Ontario, manufacturers of conveying, elevating, screening and transmission equipment, has formed a new department which will be known as the Standard Products Division.

This division will handle, in addition to sales, all matters pertaining to Carriers, Car Pullers, Hand and Electric Winches, TELEVELS, Roller Type Holdbacks, Sinden Type Box Car Loaders and Swiveloaders, Car Unloaders, Standard Grain Trimmers, SACO Reducers, Belt Cleaners (Sinden Type and Brush), Sectional Conveyors, etc.

The division will be under the management of V. L. Lewis. Mr. Lewis is a graduate of Queen's University, where he received his B.Sc. degree. After post-graduate work in business administration at the University of Western Ontario he joined Stephens-Adamson Mfg. Co. of Canada Limited, where he has been employed in the Engineering and Sales Divisions of the Company at their head office in Belleville.

PLANS NEAR COMPLETION FOR CIL AMMONIA PLANT

Negotiations covering design and construction of the process area of the C.I.L. ammonia plant at Millhaven, Ont., are now underway with the Girdler Corporation of Canada Limited and are expected to be completed in the near future. The remaining portion of the new plant will be engineered by C.I.L. engineers and constructed by general contractors still to be chosen. Advantage will be taken of existing installations on the site for steam, water, electricity and other services.

The new ammonia plant will bring to Canada a patented new process involving the partial oxidation of fuel oil under pressure. This process, which uses a heavy residual oil as starting material, was recently developed and is new being incorporated in a complete plant for the first time in the United States at Searsport, Me., in a project engineered and being built by the Girdler Company, specialists in processes involved in the synthesis of ammonia.

At its peak, the C.I.L. ammonia plant project will require an estimated 500 construction workers, practically all of whom will be recruited in the Kingston area. About 90 per cent of the material and equipment for the plant will be purchased in Canada.

Lake Shore Mines, Ltd., had a net profit of $216,406 in 1954 compared with $279,797 in 1953.

AIR IMPACTOOLS CATALOGUE FROM INGERSOLL-RAND

Today most manufacturers are searching for methods of reducing production costs. A thorough review of their fastening techniques will often present many opportunities for savings. Production men will welcome a new Canadian Ingersoll-Rand catalogue which is devoted entirely to the problem of running nuts, bolts, cap screws, and other type fasteners. Actual case histories substantiate the claims made that their light-weight Air Impactools are the answer to reducing fastening costs.

The Air Impactool Catalogue, Form 5200-A, also contains the complete line of Air Impactools manufactured by Ingersoll-Rand. It contains illustrations, specifications and the equipment furnished with each tool.

For your copy of this three-color, 52-page catalogue, send your request for Form 5200-A to Canadian Ingersoll-Rand Company Ltd., 520 Birks Bldg., Montreal, Quebec, or contact your nearest C-I-R Branch Office.

TWO LARGE INSPECTION AND TESTING COMPANIES JOIN FORCES

Two large independent inspection and testing organizations have joined forces with consequent benefit to clients of both companies. This will be the effect of an association between The Warnock Hersey Company Ltd., and Canadian Inspection & Testing Co. Ltd., according to a statement issued by R. B. Jones, chairman of the board of The Warnock Hersey Company Ltd. The statement emphasized that both companies will continue to operate under their original names and with the same staffs.

The Warnock Hersey Company Ltd., among the largest such organizations in Canada, maintains a head office and main laboratories in Montreal and branch offices and laboratories from coast-to-coast. It serves the construction, manufacturing, railroad, pulp and paper, petroleum, public utilities and many other fields.

The head office and main laboratories of Canadian Inspection & Testing Co. Ltd., are located at Toronto. Its work is somewhat similar to that of Warnock Hersey, with a preponderance of activity in the construction and transportation fields.

Man-Made Miracles Being Performed by Union-Carbide

UNION Carbide Canada Limited, which for nearly half a century has contributed to Canada's industrial and commercial development, has just issued a profusely illustrated booklet, entitled Man-Made Miracles, showing how these are accomplished at the company's five divisions, merging five companies to coordinate their diversified activities and to take full advantage of the abundant opportunities for growth.

These are the five divisions: Electro Metallurgical Company, Welland, Ont., alloys and metals; National Carbon Company, Toronto, carbon products; Dominion Oxygen Company, Toronto, industrial gases; Carbide Chemical Company, Toronto, chemicals; Bakelite Company, Belleville, Ont., plastics.

Actually the five divisions operate 25 plants in 20 cities from coast to coast; they are found near centres of industry such as Toronto and Montreal, or near large metal producers, such as Arvida, Que., or close to sources of hydro-electric power, such as Welland.

In these plants, says the booklet, "are separated or combined nearly half of the earth's many elements to produce products used in making things as common as paper clips and as complex as jet engines".

In succeeding pages, the man-made miracles are explained in detail: how chromium ores are processed into special alloys that make steel stainless; how coal is kneaded and baked into carbon products used by industry in such things as movie projectors, flashlight batteries, and giant electric arc furnaces; how a host of other products are produced from materials as common as sand and as rare as columbite; how half a dozen valuable gases are extracted from the air itself.

The booklet takes the reader on a trip through UCC, showing how "Canada's natural resources are being harnessed and turned into new and better products for industry; and how these products in turn are contributing to a better living for all of us".

GEC, ENGLAND BUYS AMALGAMATED ELECTRIC CORPORATION, TORONTO

The General Electric Co. Ltd. of England, the largest electrical manufacturing organization in the British Commonwealth, has just completed the purchase of 99 per cent of the shares of the Amalgamated Electric Corporation Ltd. of Toronto.

The Canadian company will now have at its disposal all the knowledge and experience of a vast and long-established organization in England, employing over 65,000 people and having world-wide interests.

Final refining of Canada's platinum metals takes place at Acton (London, Eng.) where Inco's United Kingdom subsidiary, The Mond Nickel Company, Limited, operates a precious metals refinery.

CGE TORONTO PLANT LEADS IN NUMBER OF ACCIDENT-FREE HOURS

Employees at the Royce Works, Toronto, of Canadian General Electric amassed 2,152,896 accident-free work hours from April 22 to November 25 last year to lead the over 1,000 plants reporting safety statistics to the Industrial Accident Prevention Association, it was reported at the organization's annual banquet.

The plant manufactures radio and TV receivers and electronics equipment for civilian and defense applications.

The association presented the R. B. Morley Award to the company at the banquet. C.G.E. vice-president R. M. Robinson, general manager of the company's electronics division, accepted the award on behalf of the 1,500 employees who amassed the safety record.

"WONDER METAL" FOUND ON BATHING BEACHES OF AUSTRALIA

Wide beaches of Australia's eastern seaboard last year produced about 70 per cent of the world's titanium-bearing rutile, a "wonder metal" used in jet planes because of its high resistance to heat and stress. Discovery of the deposits has resulted in creation of a new industry, presently earning $4,500,000 annually.

Canadian Graphits Deposits Of Strategic Importance

HORACE G. Young, president, McKenzie Red Lake Gold Mines Limited, has returned from a visit to Washington, where he has been interviewing the United States Department of Interior, Bureau of Mines, regarding the whole graphite industry in the United States. H. S. Law, vendor of the property to McKenzie, accompanied Mr. Young. They found the United States Bureau of Mines most co-operative in supplying them with all data.

Mr. Young was informed that our Canadian deposit of large flake crucible grade graphite at Bancroft, Ontario, is of strategic importance and it is the only known deposit of its kind in North America. The United States government has spent millions of dollars to prove up deposits in their own country but without success. They are entirely dependent on supplies from Madagascar and Ceylon. The annual import is 36,000 tons from these sources. Two wars have interfered with this source of supply and consequently the United States is most anxious to see Canadian property developed, thus assuring a continuous supply on the North American continent. They would be most happy if there was an assurance that there would be adequate supplies from Canada.

This crucible grade graphite is essential for generators, motors, crucibles, stoppers in foundries and steel plants, and more recently in atomic development. Graphite is being used by industry much more rapidly and in greater volume than ever before. In fact, at the present time the supply position is precarious which results in an unsatisfactory situation. Official encouragement by both government and industry was very evident in the hope that production would be commenced as soon as possible.

A world-wide material survey on graphite is now being conducted by the United States Bureau of Mines. Valentine C. Smith, controller of the graphite industry for the U.S. government during the last war, is conducting the survey. His investigations will detail all known deposits in the world, the mining, refining costs, ocean freights, etc. The survey will also include every known use for graphite, how it is used and why it is needed.

Mr. Smith will make a complete tour of every part of the industry in the United States in compiling this report. He expects to have it finished this September. Upon completing this assignment Mr. Smith has agreed to join the McKenzie Red Lake Gold Mines Ltd. as a director. His forty years experience in the graphite industry in the United States should be of inestimable value to the company.

A year ago, Mr. Smith examined the property at Bancroft, Ont. He was so favorably impressed with its possibilities, both as to tonnage and quality of product, that he requested permission to join the company and participate in the development.

The property is located one mile from the Canadian National Railway station at Maynooth, Ont., and two miles from Ontario Government Highway No. 62. Ontario Hydro Power lines cross over the property and water is directly adjacent.

Mr. Young reports that the McKenzie Red Lake Gold Mines Limited have formed a subsidiary called Gleneagle Graphite Mines Limited for the development of the property. A charter has been obtained and qualified by the Securities Commission of Ontario. The capitalization is 3,000,000 shares, of which 750,000 shares are vendor shares and 2,250,000 shares in the treasury.

The financing of this company, through its treasury shares, or through McKenzie Red Lake Gold Mines Limited, is now receiving attention. As no shaft will be required to work the deposit and the milling process is simple, the financial requirements are not large. It is estimated at perhaps $200,000.

Platinum and palladium comprise about 90 per cent of world production of platinum metals. In round figures, percentage production of the six metals follows this pattern: Platinum - 60 per cent; palladium - 30 per cent; rhodium - 4 per cent; ruthenium - 3 per cent; iridium - 2 per cent, and osmium - 1 per cent.

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CENTRAL MANITOBA MINES APPOINT FENTON J. SCOTT EXPLORATION GEOLOGIST

Central Manitoba Mines Limited have recently appointed Fenton J. Scott, as geologist in charge of exploration work, with headquarters at 274 Fort Street, Winnipeg, Manitoba.

Mr. Scott was chief geologist at Gaspe Copper Mines, Murdochville, Quebec, for several years, and has had considerable exploration experience in eastern Canada.

CIMM ANNUAL WESTERN MEETING TO HONOR SASKATCHEWAN JUBILEE

In honor of Saskatchewan's Golden Jubilee, the local Branch of the Canadian Institute of Mining and Metallurgy has persuaded the Institute to hold the 1955 western annual meeting of the Institute in Saskatchewan. It will be held in the Bessborough Hotel in Saskatoon, on October 17, 18 and 19.

The committee in charge of arrangements is presenting one of the most interesting range of papers in respect of timeliness to reach the western mining industry in some considerable time. Petroleum and uranium are, of course, stressed, but industrial minerals, hard rock mining, and coal, are all featured, as well as geological aspects. In every case, authorities in their fields are presenting the papers. The result will be a particularly well-balanced program of technical papers.

FIVE SASK. POTASH WITHDRAWAL PERMITS COVER 502,503 ACRES

The Saskatchewan Government's Department of Mineral Resources recently granted five potash withdrawal permits covering a total of 502,503 acres, extending in a strip from Saskatoon to Unity, to two eastern Canada representatives.

Resources Minister J. H. Brockelbank said that four withdrawals, covering 402,200 acres, were granted to M. W. Caldough of Toronto, and the remaining permit was granted to A. A. Allison, also of Toronto. The latter permit covered 100,303 acres.

Mr. Brockelbank explained that the maximum acreage that could be contained in a withdrawal was 100,000 acres, with a rental of 1½ cents per acre for a six-month period. He stated that the most recent withdrawals became effective July 8, 1955, and that the exact location could be determined from Potash Permit Maps, available from his department.

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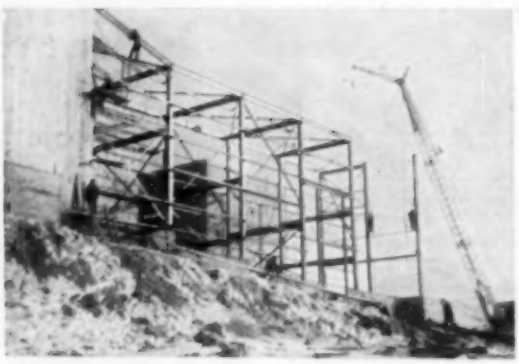
East view



West view

CONSOLIDATED NICHOLSON REPORTS UNDERGROUND DRILLING STARTED

Production of uranium ore continued on schedule during the month of May, and the ore grade is very satisfactory, Consolidated Nicholson Mines Limited, report from Uranium City, said.

Underground drilling was started in May. Two holes returned high assays in a previously unexplored section of the No. 4 one. The holes were drilled up from the second level on strike of the known ore body. Hole No. 44-4 intersected 3 feet assaying 1.05 per cent U308 at a point 33 feet above the second level. Drill Hole No. 44-5 at a point 56 feet above track level in the same plane as No. 44-4 assayed as follows: 47 feet to 52 feet—1.48 per cent; 52 feet to 56 feet—0.23 per cent. Sludges from this section in which there was considerable ground and lost core assayed 2.55 per cent U308. The true width of this section is better than 3 feet.

The relationship of these holes to the presently blocked out ore body is not known as yet. It is thought that they may represent an entirely new ore body located further in the hanging wall, says the report.

Now that break-up period is over exploration will be undertaken on other known surface showings on the property.

INCREASE IN CONSUMPTION OF STEEL FORESEEN

Speaking at the annual meeting of shareholders of Steel Company of Canada, H. G. Hilton, president, predicted steel consumption in this country in ingot tons will be 25 per cent higher by 1961 than the average, 5,500,000 tons for the years 1951 to 1953.

ALGOMA-BLIND RIVER URANIUM BELT SURVEY MAP NOW AVAILABLE

The Uranium Belt in the Algoma-Blind River area, one of the "hottest" mining zones in Canada, has been subjected to a combined airborne magnetometer and scintillometer survey, and the results have been mapped on 16 sheets, plotted on the scale of 4 inches to the mile, which are now being distributed by the Ontario Department of Mines.

The survey, which was flown early this year, covers 16 townships, and it is a continuation of the 12-township survey which was flown in the area immediately to the east last year. The townships covered in the present survey are: Striker, Cobden, Thompson, Bright, Mack, Scarfe, Patton, Gladstone, No. 161, No. 167, Montgomery, Parkinson, No. 162, No. 168, No. 175, and Grassett.

Unlike most departmental publications, which are issued free, there is a charge of 25 cents for each of the 16 sheets.

National Research Council Membership Changes

DR. R. S. Jane and Dr. H. G. Thode have been appointed by the Governor General-in-Council as new members of the National Research Council for three years from April 1, 1955. Dr. Jane is executive vice-president of Shawinigan Chemicals, Limited, Montreal, and Dr. Thode is principal of Hamilton College and director of research at McMaster University, Hamilton, Ont.

Retiring members are: Brigadier F. C. Wallace, executive vice-president, Duplate Canada Limited, Fiberglas Canada Ltd., and Smith and Stone Ltd., Toronto, and Dr. J. H. L. Johnstone, head of the Department of Physics and Dean of the Faculty of Graduate Studies, Dalhousie University, Halifax, N.S. Both have given their services to the Council continuously for six years.

Three other members have been reappointed for a further term of three years. They are: Dr. C. J. Mackenzie, president, Atomic Energy Control Board, Ottawa, Ont.; Dr. T. Thorvaldson, Dean of Graduate Studies Emeritus, University of Saskatchewan; and Dr. W. H. Watson, professor and head of the Department of Physics, University of Toronto, Toronto.

Great Mining Future Predicted For Saskatchewan

PREDICTING a great mining future for Saskatchewan, Premier Douglas, of Saskatchewan, in an address to the Teachers' Federation, said that the province has become the major producer of uranium on the North American continent. There are 11 mining operations in Northern Saskatchewan this year, he said, calling for expenditures of more than $50,000,000.

Last year the province produced twice as much base metal as Manitoba and is now only eight years behind Alberta in oil production whereas in 1948 it was 25 years behind. Last year more than 5,000,000 barrels were produced, this year he estimated the production will exceed 12,000,000 barrels and by 1960 will amount to 50,000,000 barrels.

Emphasizing the manner in which Saskatchewan is changing from a purely agricultural province to one with greatly diversified industry, he pointed out that it is producing 37,000 tons of salt a year from the Unity area; that it is producing a good grade of brick and tile for shipment as far east as Toronto and as far west as Edmonton; and that the potash development will grow to be a most important industry, employing thousands of people.

Ontario Department of Mines Report Presents New Form

THE preliminary report of the Ontario Department of Mines for 1954, which is now ready for distribution, is, in some respects, a departure from the usual form of government reports.

While the activities of each branch of the department are described in some detail in the body of the report, an introductory section serves as a general review of the department's activities and the achievements of the mining industry, not only during the last year. The report is supplemented by illustrations and, as a token of the unprecedented prospecting activity during the year, the cover is made up of a drawing of a typical prospector at work.

A number of graphs, tables and charts portray the progress of the mining industry, not only during the last year but since the beginning of the century when the annual production totalled just about $10,000,000 as compared with $484,992,796 in 1954.

The report further points out that in 1954 an all-time record was established by prospectors who staked and recorded 50,176 claims throughout the province. The area covered by these claims is considerably greater than that of all Prince Edward Island.

In the section of the report dealing with the Mining Lands Branch there is a summary of the activities of the whole branch, and each mining district is also treated individually.

Similarly, an over-all picture of the work of the Mines Inspection Branch is coupled with a detailed report of mining activities in each of the inspection districts.

The mining access roads construction program is covered in some detail and a table shows progressive activity year year by year since the program was initiated in 1951. Six roads were brought to completion during the last nine months of 1954 and four others were under construction at the year's end. Altogether in the four years of the program's operation 35 projects have been completed or are now under way.

The table of expenditure and revenue, for the fiscal year, shows a total revenue for the Department of $5,224,540 against a total expenditure of $1,880,607, including costs of mining access roads.

PLANS AFOOT TO DEVELOP N.W.T. VAST LEAD-ZINC-ORE DEPOSITS

Hon. Jean Lesage, minister of northern affairs, told the House of Commons during discussion of estimates for his department, that plans are near completion for exploitation of one of the world's largest lead-zinc ore deposits, located at Pine Point on the north shore of Great Slave Lake in the Northwest Territories.

"We hope that the Consolidated Mining and Smelting Company soon will see fit to have definite plans for the development and exploitation of this vast ore body", said Mr. Lesage. "We hope that it will be possible to work out with them some kind of understanding under which transportation facilities will be available to take the ore out."

Present plans, he said, are to build a railway from Grimshaw, end of steel in Alberta's Peace River area, to Pine Point, a distance of 300 to 400 miles.

NON-METALLIC MINERAL PRODUCTS INDUSTRY, 1953

The 52 plants classified in the miscellaneous non-metallic mineral products industry in 1953 turned out $13,227,517 worth of products as compared with $12,110,532 worth produced by 53 plants in 1952, according to the annual report by the Dominion Bureau of Statistics.

Production of foundry facings and partings decreased in value to $364,706 in 1953 from $393,010 in 1952; oil gas (Pintsch) to $554,027 from $619,806; and refractories to $4,600,213 from $4,614,189. Output of core oil and compounds increased to $128,510 from $111,790; expanded vermiculite to $1,466,944 from $1,169,696; and enamel frit, chalk and wax crayons, asphalt tile and other products to $6,113,117 from $5,175,041.

MINERAL LAW TO DATE

By RICHARDSON, RICHARDSON, McLACHLAN & NORTON,

Barristers and Attorney-at-Law, Winnipeg, Manitoba

AGREEMENT TO GIVE LEASE OF MINERALS ON BECOMING REGISTERED OWNER THEREOF; RIGHT OF INTENDED LESSEE TO FILE CAVEAT:

Canadian Superior Oil of California Limited vs. Cugnet (1954) 12 W.W.R. (NS)174 (Sask.).

Under an agreement in writing and dated May 12th, 1945, one Edmond G. Cugnet, the then registered owner of certain lands in Saskatchewan, including minerals, sold all his interest therein to the defendant Raymond A. Cugnet on terms. The defendant did not file a caveat against the lands to evidence his own interest therein until April 3rd, 1952, and he became the registered owner on January 5th, 1953. On May 19th, 1948 the minerals included in the title were forfeited to the Crown for non-payment of taxes under the provisions of the Mineral Taxation Act of Saskatchewan. Then on October 25th, 1949, an order-in-council of the Saskatchewan government was passed under the Mineral Resources Act extending the time to October 31st, 1950 with which order might be made relieving among others the land in question from forfeiture of the minerals. One of the conditions of securing an order is the payment of all arrears of taxes. On October 31st, 1949 one Washington who was well and favorably known to the defendant and to Edmond G. Cugnet, acting as agent of the plaintiff company secured from Edmond G. Cugnet a petroleum and natural gas lease over the lands. Part of the consideration therefore was stated to be payment by the plaintiff of all arrears of mineral taxes up to and including December 31st, 1949. The lease contained a further provision that the lessor agree that if he was not at the time of signing the lease the owner of the mineral rights referred to, the lease would become effective on the date that Cugnet did become the registered owner thereof. The lease also provided for a delay rental of $16.00 per annum and such rental was paid to Edmond G. Cugnet and retained by him in each of the years since the lease was entered into. Further, the plaintiff paid the arrears of taxes and on August 21st, 1950 Edmond G. Cugnet again became the registered owner of the minerals. The plaintiffs on December 31st, 1949 had registered a caveat indicating its claim to such minerals. This action was brought in the courts to "continue" such caveat. The defendant Raymond A. Cugnet opposed the application to the court alleging that Washington, the agent of the plaintiff, had before and at the time the lease was entered into, full knowledge of the fact that Edmond G. Cugnet had already sold the land in question, including minerals, to the defendant Raymond A. Cugnet. The court found as a fact that Edmond G. Cugnet had informed Washington of the existence of the agreement for sale between himself and the defendant Raymond A. Cugnet.

The court held that such fact was not a defence to the plaintiff's claim to maintain its caveat. The mere notice of a non-registered interest in the land (in this case that of Edmond G. Cugnet) does not defeat the interest of the person who secures an interest subsequent thereto and protects his interest by the filing of a caveat. Judgment was given declaring that the petroleum and natural gas lease to the plaintiff was valid and enforceable; that the caveat was valid in law and properly registered against the lands, and directing the registrar of the Land Titles Office to continue the caveat in force against the lands and to discharge the certificate of lis pendens which apparently had been filed by the Cugnets or one of them.

J. B. DE HART, WELL-KNOWN IN ALBERTA MINING CIRCLES, DIES AT CALGARY

Well-known in western mining circles, John Bertram de Hart died in Calgary General Hospital on June 9 at the age of 64.

A former mining engineer with the department of natural resources of the Canadian Pacific Railway, he was a past president of the Professional Engineers of Alberta, a member of the Canadian Institute of Mining and Metallurgy; and atbone time dominion councillor for the Engineers Institute of Canada. He had considerable experience in the coal mining industry of Alberta, for 14 years having been a district mines inspector.

Born in Newcastle, England, he came to Canada at the age of 17 to attend McGill University, where he was graduated as a mining engineer.

CALGARY GEOLOGISTS HONORED

Two Calgary geologists, Dr. W. C. Gusson and Dr. J. C. Sproule have been elected members of the Royal Society of Canada.

EIGHT PARTIES TO TAKE ADVANTAGE OF SASK. PROSPECTORS AID PLAN

Eight prospecting parties will take advantage of Saskatchewan's Prospectors' Assistance Plan to hunt for radioactive and base metals in the province's Precambrian Shield region this year, Hon. J. H. Brockelbank, Minister of mineral resources, announced.

The minister said that two of the prospectors are graduates of the annual prospectors' School sponsored by the department at La Ronge. Assistance given the prospectors under the P.A.P. includes air transportation to the area chosen, loan of canoes, tents, tools and other equipment necessary for prospecting, and covers claim recording and assaying fees.

Mr. Brockelbank said the object of the P.A.P. is to promote a wider search for minerals in northern Saskatchewan, and to remove some of the obstacles that in the past have prevented competent prospectors from getting out into the field—provision of air transportation having eliminated the major expense item.

All P.A.P. parties will be operating south of 57 degrees, 30 minutes north latitude—roughly a line running east and west across the province cutting through the middle of Cree Lake.

B.C. FIRM SHIPS IRON ORE TO GERMANY

Texada Mines Ltd. of British Columbia has made a contract to ship iron ore to West Germany, first shipment amounting to 100,000 tons.

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A NEW OIL PROVINCE

Manitoba's oil industry — the newest addition to the province's mineral family—will produce its five millionth barrel of crude oil this month.

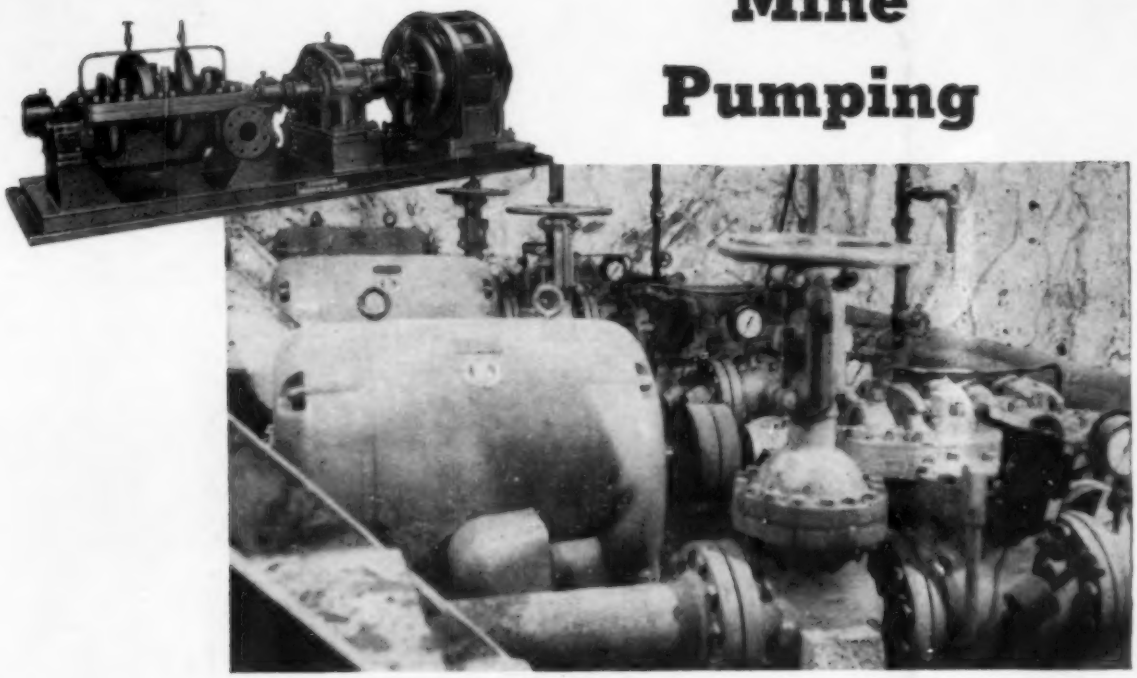
The number of producing wells is now 406 and every day the total grows. Nine separate fields contribute to Manitoba's petroleum production.

This rapid increase in production is also being matched by exploration. Drilling for new wells is proceeding at its fastest pace since the original discovery of oil in the province in 1951.

The phenomenal growth of the oil industry, only now in its fourth year, has prompted an even greater enthusiasm for the future of Manitoba's diversified mining industry.

Department of Mines and Natural Resources
WINNIPEG, MANITOBA
Hon. Chas. E. GREENLAY, Minister J. G. COWAN, Q.C., Deputy Minister

Multi-Stage Pumps for Mine Pumping



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